Personnel

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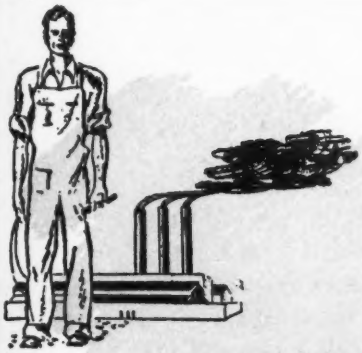

In This Issue

Professional Standards for Personnel Executives

★

Psychological Tests

★

Teaching Management in Wartime

★

Industrial Relations Organization

★

Sickness Prevention Program

★

Time Study Training

AMERICAN MANAGEMENT ASSOCIATION

AMA

MARCH, 1943

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Personnel

CONTENTS ☆ MARCH, 1943

VOL. 19 No. 5

"STRICTLY PERSONNEL" . . . . . Page 642

DEVELOPING PROFESSIONAL STANDARDS FOR PERSONNEL EXECUTIVES
By Charles A. Drake . . Page 646

THE VALUE OF PSYCHOLOGICAL TESTS IN INDUSTRY
By R. S. Driver . . Page 656

TEACHING MANAGEMENT IN WARTIME
By Victor S. Karabasz . . Page 665

INDUSTRIAL RELATIONS ORGANIZATION AND PERSONNEL ADMINISTRATION
By D. B. Harris . . Page 674

HOW TO ESTABLISH A SICKNESS PREVENTION PROGRAM . . . . . Page 686

TRAINING MEN AND WOMEN FOR TIME STUDY
By David D. Garvey . . Page 693

THE PERSONNEL BOOKSHELF . . . . . Page 698

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..... Strictly personnel

Cooperation Makes Headway

Evidence that management-labor cooperation in the war effort is making considerable headway is provided by two recently published booklets: *Producing for Victory,* prepared by the International Federation of Architects, Engineers, Chemists and Technicians, C.I.O.; and *Production Standards from Time Study Analysis,* issued under the joint imprint of Local No. 2, U.A.W., C.I.O., and The Murray Corporation of America.

Producing for Victory, which is designed as a guide for labor-management committees, takes up such matters as flow charts, use of jigs and fixtures, safety and health, capacity use of equipment, and methods of increasing the productivity of the worker. It is prodigal of specific suggestions. For instance:

"One subcontractor was confronted with a high rate of spoilage on machine-gun parts. Management decided to set up a complete assembly in full view of the workers. The parts in question were visible to all so that, thus dramatized, their importance was made real to everyone. The parts were no longer just parts —they became vital parts in the assembly, and the workers took pride in and responsibility for them."

"A drilling operation required eight holes perpendicular to the axis on the circumference of a blank. Holes were made one at a time. But with a jig and eight drill presses arranged radially in a horizontal position, only one drilling operation was needed."

Executives who fear that all this may lead to usurpation of management authority will be reassured by this paragraph: "And again one watchword: Labor representatives speak for and give expression to the ideas of union members in the plant. *Such committees are not meant to take over the functions of management* [italics the union's]."

Fruit of an unusual, if not unique, experiment in management-labor cooperation, *Production Standards from Time Study Analysis* is a manual intended for the entire union membership, designed not to teach the details of time study but to convince the men at the machines of its basic necessity. Because production disputes were a major problem at Murray, it was agreed, through negotiations between the Local and the management, that the union's time study stewards should be given a course in time study by Stevenson, Jordan and Harrison, Inc., management engineers. The book is the result of the stewards' schooling and practical experience on the job. According to Lloyd T. Jones, president of the Local, production disputes are now a thing of the past.

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The Executive Pay Freeze

Marked turnover among employees of executive rank has resulted from the stabilization policies on salaries over $5,000 developed by the Bureau of Internal Revenue, according to a survey completed by *The Journal of Commerce.*

Local stabilization units of the Bureau have adopted the general policy that those earning more than $5,000 already have sufficient income to absorb rises in the cost of living; in consequence, application of the "Little Steel" formula providing cost-of-living wage increases up to 15 per cent is not allowed in these cases.

The Bureau's policy poses serious administrative problems for many companies that have already encountered difficulty in finding executive talent in the present "sellers' market." In some areas, executives have obtained larger salaries by the simple expedient of resigning their jobs and accepting more lucrative positions in other companies in the community. Other devices, including performance of certain executive services on a professional fee basis, are being increasingly resorted to.

The survey indicates that the following salary stabilization policies have emerged as a result of rulings promulgated by the Bureau during the past few months:

1. Applications for salary increases based on the rise in the cost of living are denied.

2. Applications based solely on "harder work" are denied, on the ground that "everyone must work harder during the war."

3. Applications based on the reclassification of an executive, involving the assumption of greater responsibilities or the performance of more difficult duties, are approved.

4. Salary increases which would "aid in the prosecution of the war" are approved, provided that proof can be given of such aid.

5. Increases required to eliminate inequalities and maladjustments within a company are approved.

6. Increases covered by a company's incentive plans or length-of-service plans are approved, when submitted to the Bureau's units, although such increases actually may be placed into effect without obtaining their permission. Where an executive's advancement is more rapid than that provided for by a company's established plan, permission of the salary stabilization unit must be sought.

7. General increases to meet higher salaries paid by other companies are not approved. Where a company, however, can prove that such an increase is necessary in the case of individual executives, to "aid in the prosecution of the war," consideration is given to the application.

8. After wage increases have been granted to workers, salary increases may be approved for foremen, superintendents, and other salaried workers receiving less than $5,000 a year, in order to maintain the normal differential between their pay and that of wage earners under their direction. Such increases, however, are not applicable to executives receiving over $5,000.

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Eyesight Conservation in Industry

Recognized methods of protecting the eyesight of workers are being overlooked by industry, in contrast to the widespread provision of general safety measures, according to a report by the National Society for the Prevention of Blindness.

The report was based on a study of 50 typical plants employing approximately 167,000 workers. In issuing it, the Society called attention to an estimate that at least 25 per cent of industrial workers have defective, but correctible, vision.

"Although front-rank companies provide good general safety facilities, they, for the most part, appear to be unaware of the importance of eyesight in industry as a managerial responsibility," the report states. "Obviously, industrial concerns need to give much more attention to the subject of industrial vision,

not only for humane reasons, but to increase production, to reduce spoilage, and to add manpower. One thing that can be done, for instance, is to provide prescription lenses to correct subnormal vision so that workers may be usefully employed in the war effort who would not otherwise be available."

Practically all the plants investigated are carrying out faithfully most general safety procedures—such as maintenance of first-aid facilities, employment of safety supervisors, enforcement of accident prevention rules—but inadequate provision is made for protecting eyesight and improving visual conditions in the plant.

More than three-fourths of the plants covered indicated that they make no effort to determine what visual requirements are necessary or acceptable to qualify a worker for any particular job. "This means," the report explains, "that these plants do not know how many color-blind or one-eyed men, or men with subnormal but correctible vision, can be utilized. On the other hand, they may be employing men whose vision is a hazard on the particular job. For example, a man may be working as a crane operator who has deficient 'depth perception' and so cannot judge the height and placement of the crane load. This would make him a menace to life and property, while, if assigned to another job for which his eyesight is suited, he could carry on safely and effectively."

Only 14 per cent of the plants arrange for periodic eye examination of workers who are exposed to particular hazards. Failure to provide or require the use of prescription lenses in goggles, when needed for either safety or efficiency, was found in 42 per cent of the plants.

The study disclosed that accident reports of industrial plants often fail to note the condition of the worker's eyesight or the illumination at the scene of the accident when an injury occurs. Only 22 per cent of the plants indicated the eye condition of the individual involved in an accident, and only 12 per cent mentioned the illumination at the scene of an accident.

Though most authorities agree that the vast majority of industrial eye injuries can be prevented simply by wearing goggles or other protective equipment, this precaution is not taken in many cases. "Eighty per cent of the plants claim to supply goggles to workers whom they consider exposed to hazards," the report states. "This figure is doubtless in excess of the fact, because some exposures are frequently not recognized. For example, some front-rank plants do not consider that a lathe operator is exposed to eye injuries."

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Wartime Status of Apprenticeship

Apprenticeship programs must be continued with renewed vigor in wartime, declares the Federal Committee on Apprenticeship. Taking issue with those who feel that apprentice training should be curtailed for the duration, the Committee recently recommended that apprenticeship programs be established under regular peacetime standards but that they include such wartime provisions as may be necessary to provide trained workers essential to the conduct of the war.

The Committee offers the following suggestions concerning the wartime training and utilization of apprentices by industry:

In those industries where it is essential to war production to secure the services of all-round skilled workers at the earliest practicable time, established apprenticeship programs should be amended to provide for the advancement

of apprentices as rapidly as their ability permits, and new apprenticeship programs should be drafted with war provisions to take care of the emergency training situation. By improvements in supervision and in job and related instruction for the apprentices, their skills will be rounded out in a shorter time than is required in peacetime. Under these improved conditions, apprentices may advance in their skills more rapidly. This advancement should be measured by objective tests established or given by joint apprenticeship committees. New apprentices in critical industries should be selected from groups least likely to be called to military service or from those released from the armed services for physical reasons, with special consideration being given to candidates who have had experience or training in the trade or a trade requiring similar aptitudes.

Because of the shortage of skilled workers in war industries to serve as supervisors, job instructors and foremen, and to perform the work of journeymen, advanced apprentices should be moved into any job classification which will permit maximum utilization of their highest skills. It is recommended that apprentices so reclassified should be paid the wage rates applicable to the jobs to which they are promoted.

In some instances, an employer, or several employers in war industries, may have more advanced apprentices than jobs available to utilize their highest skills. At the same time, war production may be suffering in other plants in the same industry through a shortage of men having such skills. In such situations, through joint action of management, labor, and the field staff of the Apprentice and Training Service, arrangements could well be worked out for the reclassification of the surplus advanced apprentices and for their transfer to jobs where their full skills can be used.

Where advanced apprentices are reclassified, the issuance of certificates of completion of apprenticeship should be determined by the local joint committees concerned. Since most reclassified apprentices will continue improving their skills and knowledge of the trade even at an accelerated rate in jobs of higher responsibility, it is recommended that joint committees favorably consider the issuance of certificates of completion upon reclassification of apprentices to such jobs.

Industry should not be encouraged to believe that apprentices selected from younger age groups will or should be deferred from military service if the time comes when they are needed. However, by training these young people through apprenticeship, industry will be performing a high public service, as well as a service on its own behalf. During the training period the employer will be receiving the valuable production work of the apprentices, and he will be preparing a skilled working force for peacetime needs.

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End Use—To Kill

"Our product's purpose is to kill people, and everything we do here is calculated to achieve that objective. Now, if you feel squeamish about that idea, you will have to reconcile yourself to it or leave the company." That's what one munitions concern tells its new employees (mostly women) when they enter the company's training classes. Even though somewhat shocked at the realization, the employees regard their new jobs more earnestly and grimly.

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▶ Apparently the first health and safety booklet written exclusively for women workers in war industry is "Women Safe at Work," issued by Allis-Chalmers Manufacturing Company. In addition to general health and safety rules and rules for particular departments, the booklet contains a section on safe clothing.

DEVELOPING PROFESSIONAL STANDARDS FOR PERSONNEL EXECUTIVES

By CHARLES A. DRAKE*

As personnel management demands an ever-widening body of specialized knowledge, there is a pressing need for determining the personal qualifications, the training and the experience which its practitioners should possess. Such standards must be formulated cooperatively by employers, personnel executives and educators. In this frankly exploratory article, Dr. Drake cites five commonly accepted criteria of a profession and urges greater adherence to the requirements they impose. Only by developing to full professional stature, says the author, can the managers of human relations in industry achieve maximum effectiveness.

THOSE of us who attend personnel conferences in various sections of the country cannot fail to be impressed by the stimulating discussion evoked relative to the best use of our human resources in the productive process. But of far greater intrinsic import—and this becomes more evident with each succeeding year—is the lively spirit of inquiry which prevails, the forthrightness with which experiences are exchanged, shared and evaluated. Industry, more than ever before, is becoming "alive" to the importance of the industrial relations function; operating executives in encouraging numbers are speaking out for organized personnel management programs. Indeed, the whole field of human relations in industry is growing in stature and in status.

ROLE OF THE LEADERS

In the development of any science or art there is naturally a "lag" between the thinking and practice of the leaders and those of the great body of persons who are working—or who aspire to work—in the area. However, as standards are evolved and uniform techniques adopted, this gap is progressively lessened, and every practitioner functions on a relatively higher level.

In this respect the field of personnel management is no exception. There are the leaders—men and women whose concepts begin in philosophy, are weaned by economic and social forces, and emerge as sound and practical applications of facts. All the contributions of this group have not yet penetrated down the line, and current personnel procedures deviate in greater and lesser degree from what may be termed "best practice." The significant fact, however, is that with each passing year standards governing personnel activities are more generally adopted and specific techniques gain wider acceptance. Inevitably the individual personnel executives

* Author of *Personnel Selection by Standard Job Tests*, McGraw-Hill Book Company, Inc., New York, 1942.

come progressively closer to being what they should be—specialists in human engineering, in the management of the people who make up the "human equation" in industry.

THE NEED FOR CRITICAL EVALUATION

As effective personnel management continues to demand and embrace an ever-widening sphere of specialized knowledge, as its subject matter and methods lend themselves increasingly to organized study, it is no longer feasible, or even possible, to depend upon an "intuitive" approach to the development of those seeking a career in personnel work. On their behalf, there is urgent need for a definition of the equipment, in terms of training, experience and personal qualifications, which the personnel man should bring to his work. Of course, the formulation of standards for vocational preparation, for the application of the teachings, and for the professional conduct of personnel administrators should not be interpreted as an attempt to undermine the position of those in the field who may now fall short of the goals. No profession exists which did not first pass through a proving period such as characterizes the status of personnel management today. During such a period the ideals of attainment were defined and the standards prescribed whereby these ideals could be achieved, or at least approximated. The pioneers in the field evolved these standards at a time when they themselves lacked much of the equipment necessary to fulfil the requirements they set forth. What is significant is that they did develop themselves to the fullest possible extent. Of those following them, stricter conformity to the standards was demanded, until finally only those who met the criteria in all particulars were admitted as members of the profession.

The implications of the above are evident. Personnel executives must be willing to subject themselves and their activities to minute scrutiny and criticism. The most able of the group of necessity must be the severest critics, for it is they who have greatest insight into the limitations of themselves and their colleagues. Like the pioneers in other professions, they need the humility and the personal integrity to admit their shortcomings. Also they must have sufficient pride in their calling to motivate them to seek to enhance its prestige and to protect it from charlatans and drifters who are ever ready to take advantage of any laxity that exists in defining standards of training for, and performance in, a given field.

APPRAISING THE RESPONSIBILITY

Basic to any discussion of the development of professional standards for personnel management, however, is the acceptance of this main thesis:

The objectives of industrial relations can be realized in any one organization only to the extent that the personnel executive is *qualified* to formulate a sound program of activities and top management has the ability and vision to evaluate what is offered and the leadership to encourage its acceptance down the line. *Where the personnel manager fails, his failure is equally the failure of top management.*

This is no mere attempt to assess blame. Rather it is meant to show how deeply imbedded in general management are the roots of personnel administration; how difficult would be any attempt on the part of personnel men to dignify their activities where the sincere and wholehearted support of the operating heads of industry is withheld. This point becomes clear only if the true nature of personnel management is emphasized and fully understood. The personnel executive, properly viewed, is a staff officer. In his capacity as *adviser* and *expert,* he assists general management in formulating and carrying out policies governing employee relations. The direct application of these policies is primarily the responsibility of the line executives. In view of this interdependence—which is at once the strength and weakness of personnel administration—it is not amiss to say that the staff specialist in human relations can perform on a high plane of professional competence only if general management views his function in proper perspective and is prepared to accord him his rightful place in the organization.

There is still another party to the development of professional standards for personnel workers that must play a more pronounced role than heretofore—that is, the universities. The major criticism now leveled against educational institutions is that they have been preoccupied with certain narrow phases of industrial relations and have accorded relatively slight consideration to the field as a whole. They have been charged with failure to grasp the essential character of the labor relations problem or to provide balanced programs of study calculated to cut across the various areas of knowledge which enter into the management of men. What is most important (and this is equally true of fields other than the teaching of personnel management) attention to subject matter appears to overshadow education in scientific methods and techniques.

It is generally agreed that the initiative for establishing well-balanced programs of study on the proper levels of the curricula must come from industry. Top management must define more adequately for the universities its requirements with respect to the technical and personal qualifications of personnel men. It must make more vivid to educators the day-to-day problems which the personnel man is called upon to deal with. Finally, it rests with industry to lend the financial assistance which may determine

how far a particular university can cooperate in any program for turning out individuals with the requisite training and abilities.

MISTAKES IN "PERSONNEL" THINKING

Lack of real understanding of the nature of the personnel function on the part of industrial executives, of personnel workers, and of aspirants to personnel positions is often the reason for the unfortunate choices that are made in filling the job of personnel director, for the type of candidates who present themselves as qualified, and for the poorly conceived programs that are offered in the name of personnel management.

Following are two major fallacies in the "personnel" thinking of some line managements which have militated against the establishment of professional standards for the personnel field on a more clear-cut basis than is now the case:

1. *That personnel problems do not lend themselves to scientific appraisal and that the "human factor" is not subject to control.*

Where top management still holds this view—in the face of the abundant evidence that exists to the contrary—the personnel program is usually predominantly paternalistic in character. Attention is directed primarily to effects rather than to analysis of causes. There is an inclination to indulge in grandiose gestures of good will. In fact, the program is tinged with the brand of emotionalism and flamboyance that did so much to discredit personnel management in its early days.

This absence of a rational approach to the administration of personnel activities is especially surprising and painful when it is found in organizations making unique contributions in the fields of product research, marketing, mechanization of process, and other material aspects of line operation.

2. *That any efficient employee who is acquainted with the operating side of the business can soon learn to be an equally efficient personnel executive.*

What a stumbling block this has often proved for employee and management alike! The writer is reminded of the case of a merchandising organization with some 1,000 employees which installed as "personnel director" one of its receptionists—a mature woman with a record of some five years of service with the company. The result was almost two years of blind groping on her part to determine the nature of her duties and responsibilities and a continuous round of unpleasant encounters with various operating executives who resented her "meddling." In effect, the so-called head of the personnel department was allowed to be a glorified "hiring clerk"—and not a very good one at that! Of course, the unfortunate lady in

question was dismissed, but not before the whole idea of an organized personnel department had been soundly damned by the majority of the line organization.

This should not be construed as a blanket indictment of every instance in which a company seeks a personnel director among its own rank and file. It is rather intended to point out that, where this is done, the organization must understand fully what it expects to achieve—i.e., the contemplated program of personnel management must be based on expressed policy. The limits of responsibility and authority of the personnel department must be specifically defined, and all concerned in the organization must be informed of the relationship of the personnel department to their own activities. What is equally important, the person selected to put this policy into effect must be someone who is thoroughly capable of viewing his new situation in proper perspective. He should be fully aware of the need—and prepared to spend the time and energy required—to implement his background of operating experience with the extensive reading and study in the field of industrial relations without which he can hardly hope to do a creditable job of personnel management.

Misconceptions among personnel workers and candidates for personnel positions regarding the exact nature of the personnel function are even more startling than those attributed to line management. One would naturally assume that persons sufficiently motivated to select a particular field for a career would display a lively interest in current trends in their chosen work. They would be expected to adopt the correct attitudes and to assume the implied responsibilities. But here are some examples of the thinking of a portion of the group which is now doing, or hopes to do, personnel work:

1. *That sympathy for, and understanding of, people is all the equipment necessary to fill a personnel position.*

No one would deny that sympathy and understanding are assets in the management of men—or in any other phase of human relations, for that matter. But how many persons would be willing to submit to an operation at the hands of a "doctor" who professed great love for humanity but could produce no evidence of any preparation or affiliations in the field of medicine? Is it not equally absurd to engage a personnel man who emphasizes a desire to benefit his fellow men as his major qualification? What dire poverty of equipment it would constitute in any attempt on his part to tackle wage adjustments, to effect the settlement of a labor controversy, or to do a piece of original labor relations research! Here again the situation is an open invitation for all manner of welfare schemes and

pseudo-scientific activities which have long since passed out of the purview of legitimate personnel management.

2. *That day-to-day performance on the job marks the limit of the personnel man's responsibility to his organization.*

Certainly no physician worthy of the name considers his responsibility to his patients finished when he closes his door on the last of them. Rather, this is usually his opportunity to do some reading of medical books and journals. Or he may retire to his laboratory for a few hours of research. His vacation, if any, is frequently spent at a conference of one or the other of the medical societies to which he belongs. His activities admit of no dictation by either clock or calendar. In short, his is the true professional approach.

Similarly, the personnel man's responsibility to his organization does not cease at the close of the business day. He has a distinct obligation to keep himself informed on current developments in industrial relations. He too must read extensively, join professional societies, attend meetings, and engage in other professional activities calculated to increase his fund of knowledge, to enable him to evaluate his own methods as compared with those reported by his colleagues, and, in general, to enhance his value to his company. This certainly cannot be done on a 9 a.m. to 5 p.m. basis, as too many so-called personnel executives are prone to think.

MEETING THE CRITERIA OF A DEVELOPING PROFESSION

From the foregoing discussion it becomes evident that the only way personnel management can attain maximum effectiveness in industry is through a concerted effort on the part of top management, personnel men, and the universities to define more rigidly the professional standards governing activities in the field and to stipulate the responsibilities of the specialists who are to represent it in practice.

It is intended here to give clarity to the above contention by presenting certain criteria* which are the characteristics of a profession and by indicating, even if only broadly and tentatively, the ways in which these criteria may be *more generally met* by personnel executives. For the student of industrial relations who is seriously interested in preparing himself for a life career in this work, there reside in these criteria the contents and the obligation of his "Hippocratic Oath."

1. ***A profession is an occupation which requires intellectual training as contrasted with mechanical skill.***

If there are mechanical skills which will assist a personnel man in

* The five criteria here used were developed by Henry S. Dennison and Joseph H. Willetts.

collective bargaining, they have not yet been brought to light. If there are mechanical skills which will assist him to discover causes of grievances among workers and so to eliminate them, they, too, have yet to be uncovered. But ask a number of topnotch personnel executives what the content of training for their field should be and they will variously specify psychology (educational, social, abnormal, industrial), sociology, industrial history, labor economics, statistics, industrial organization and management, labor legislation, law, industrial engineering, industrial medicine, and personnel administration and industrial relations *per se*. There is thus little question that personnel management, by very virtue of the areas across which it cuts, meets the first criterion of a profession.

The great need, at present, is for cooperative research to determine the essential content of the subject matters considered desirable in the vocational preparation of personnel administrators, so that this may be reduced to some organized curriculum. In this connection, it is generally conceded that specialized training in personnel administration would be most effective when provided on a graduate level of instruction and combined with considerable field work. Also, students would be required to have had some general industrial experience previous to specialization. A limited number of colleges and universities—among them Radcliffe, Harvard, Princeton and Stanford—have given more than lip-service to this proposal by instituting regular programs of study in personnel management. An even more substantial number of educational institutions are now devoting considerable thought to the matter. In this development the young person who is seeking to prepare himself for a career in personnel work has a decided advantage over his predecessors, who have had to learn "the hard way."

Among many personnel executives who seek to be more professional in their approach, yet who are no longer in a position to devote long periods to formalized training, the idea of intensive short seminars, extension courses, and brief institute training is gaining ground. This, combined with reading, independent study, and attendance at professional meetings, will go a long way toward maintaining a high standard of professional performance among this group.

Finally, and this point deserves special emphasis, preparation for effective personnel work should go one step beyond the acquisition of knowledge of theory and facts. It must include schooling in techniques—of research, of testing, of interviewing—and in scientific methodology, if the practitioner is to continue to meet new problems successfully long after much of the specific subject matter studied has yielded to shifts in emphasis or is no longer applicable.

2. ***A profession employs the fruits of science; uses the scientific method and maintains an experimental attitude toward information.***

The previous section indicates to some extent how heavily the field of personnel management draws upon scientific knowledge in dealing with its own particular situations. In fact, it may be said that there are few sciences which *have not* at one time or another been mustered into active service in the solution of human relations problems.

Personnel men are much indebted to professional organizations for the work they have done, through their publications, their research services, and their conferences, in stressing the scientific approach to personnel management problems—an approach based upon impartial investigation, analysis of all pertinent facts, and orderly solution on the strength of the findings. The literature made available to their membership is timely and highly selective. Periodic gatherings serve to gain a wider hearing for a rich body of ideas, opinions, facts and experiences representing the most advanced thinking and practice of this and other countries.

The individual personnel executive's attitude and approach cannot help being shaped materially by these influences—the reading matter he receives, the speakers he hears, the panel discussions in which he participates, and the many personal contacts he makes. He becomes increasingly open-minded to new philosophies and new techniques. In conceding their efficacy in the situations reported, however, he always bears this reservation in mind: How does this apply to the situation in my own organization? What adjustments are necessary to make it more applicable? On this basis, new measures are introduced and their effects are carefully studied. The personnel executive has to "see for himself" before he will give final and complete assent to much that he reads and hears.

3. ***The professed knowledge is used by its applicant to the service of others, usually in a manner governed by a code of ethics.***

By its very nature, personnel administration, as practiced by a staff specialist, is a "service" function, implying equal obligation to management and worker, and, as a natural concomitant, to the community. True enough, management is footing the bill for the industrial relations program. But if this fact is permitted to obscure the conscience of the personnel executive—if he yields to pressure from the "hand that feeds him" despite contrary convictions on his part—he is no longer acting in the spirit of his calling. Many a personnel executive adheres strictly to fearlessness of purpose, safe in the knowledge that in the long run any other course would lose him the respect of even the very group that may be clamoring for his endorsement of policies and practices he considers unsound.

The code of ethics of the industrial relations field—of which the service

motive is a dominant feature—has begun to color much of the authoritative writing in the field. It is gaining clarity and direction in the process of evolving, and the time is now ripe for bringing together the widely scattered content into some concise and coordinated form. Such a statement of principles will cover the character and personality requirements of the practitioner. It will challenge his trustworthiness as guardian of management and employee confidences. It will outline his responsibilities with respect to his continued growth in professional stature through original thinking, independent research, and exchange of opinion and experience with his colleagues. Finally, it will demand ever more rigid conformity to its precepts as these are reappraised in the face of changing situations and proved sound by the test of time.

4. *The amount of financial return is not the chief measure of success.*

Undoubtedly the compensation of the personnel executive is beginning to reflect management's growing recognition of the far-reaching significance of his function—and this is as it should be. Were it possible, however, to calculate accurately in material terms the economic and personal well-being of which his work, competently performed, is productive, he would always emerge underpaid. But no industrial relations man of professional stature would limit the amount of his service in terms of the monetary return. Like the doctor, the minister, the teacher, he derives his primary satisfaction from other sources. It lies in the sound relationships he helps to promote, in his contribution to the development of every individual coming within the scope of his organization, and in the confidence and the prestige he commands from management, labor, and his professional colleagues.

5. *The professions are given public and often legal recognition.*

This final criterion of a profession is a natural outgrowth of the four preceding ones. Adherence to the requirements of sound training, to the motive of selflessness and service, to the scientific method of obtaining and treating information, and to the subordination of financial return to other forms of compensation inevitably will secure and hold the respect of the public and gain open recognition for a profession.

As greater numbers of personnel executives conform to well-defined standards governing their work, and as general management considers for the position of personnel officer only individuals who are equipped to attain and maintain these standards, general acceptance will be accorded the professional status of personnel management. At that time, it will no longer be possible to make a statement such as was recently heard at a gathering of industrial executives. Said the speaker (and he was referring in particular to the personnel men present):

"One hundred and thirty million people know that they cannot doctor other people; they do not attempt to preach from the pulpit or even from the floor, nor do they attempt to build a bridge from blueprints—but they would not hesitate to take over your business any time you are ready to step out."

IMPLICATIONS

The management of employee relations is far too virile a thing to be used as "window-dressing." Now, more than ever before, it dare not be subservient to general management where the latter is tinged with insincerity or doubt. Personnel executives must have a more healthy respect for their place in the industrial structure, and this respect must be directly reflected in the backing they get and the status they enjoy.

There is, to my mind, no better way to insure sound relationships between the staff and line executives concerned with the administration of industrial relations policies than for the former to adopt and adhere to professional standards of performance. It is a tribute to many progressive managements that they have recognized the professional stature of personnel men by according them positions of first importance in the organization. As such, these men have played a dominant role in the formation of human relations policies for their respective companies.

Finally, where general management, despite the best efforts of the personnel executive, violates by word or deed the character and spirit of personnel management, it must be brought to realize that it prejudices thereby its own aspirations to professional stature.

Piecework and Production Efficiency

ON the theory that lack of incentive has much to do with cases of voluntary absenteeism and other symptoms of worker apathy, some authorities are advocating a return to piecework and other incentive systems in industries where such systems were formerly in vogue. Some go so far as to say that production could be increased 100 per cent within 10 days by adoption of piecework.

While this estimate seems rather optimistic, a recent spot check of eight personnel men who have handled factory workers under both piecework and hourly systems brought reports that output could be increased from 25 to 40 per cent with the same number of employees and in the same working hours if workers were given the personal incentive which piecework provides. One employer with some piecework employees working on the same jobs as hourly-rated men reported that the piecework men turn out one-third more work and make 33⅓ to 40 per cent more money.

—*The Journal of Commerce* 1/11/43

THE VALUE OF PSYCHOLOGICAL TESTS IN INDUSTRY

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In inaugurating a program of employee testing, management should weigh its choice of method in the light of several factors: applicability of the method to the individual situation; research time, skill and experience required; validity of results; and cost. Mr. Driver here summarizes the advantages and disadvantages of the various test approaches from these points of view, citing the experiences of several industrial companies. This paper was originally presented at the 23rd Annual Conference on Human Relations in Industry, held last summer at Blue Ridge, N. C.

IN the present emergency industry is faced with the necessity for better methods of selection as well as of training, induction, etc. The labor market has contracted sharply and will undoubtedly continue to contract. On the other hand, production schedules have been tightened. Many companies have relied on such traditional methods of selection as the interview, investigation of references, application forms, etc., but critical examination of the results of these methods has often indicated that the data obtained is unreliable. In the following discussion I shall attempt to indicate the value of tests and the methods of using tests in an industrial situation, although in no sense will this be a technical discussion. Companies which decide to use tests as a result of this discussion are advised to consult qualified technicians capable of assisting them in the proper selection and application of such tests. The names of various technicians can be obtained by consulting the membership list of the American Psychological Association.

Perhaps the best approach to selection is to utilize any or all employment techniques that together will supply the required information. Thus, for example, the combination of the interview, tests, investigation of references, medical examination and application blank will usually produce results which are better than the results produced by any single one of these techniques. In this discussion, only the use of tests in *employment* will be emphasized. However, tests are used in other phases of personnel procedure and, in general, are only used in combination with other personnel techniques.

A test, as I am using the word, refers to a means of sampling human behavior. This sample must be proved to be a representative sample of the behavior of an individual. That is, each time such a sample is obtained, by administering a particular test, it should be relatively the same as the preceding sample or, in other words, reliable. Likewise, the results of a

test must be representative of the type of behavior that one desires to measure. Such a test is referred to as a valid test. In other words, a valid test has been proved to measure that phase of human behavior which it was designed to measure. Tests also must be given under standard conditions of time, place and environment, etc.

There are a wide variety of tests in use today which purport to measure such abilities as ability to learn, clerical skills, mechanical ability, motor skills, temperament traits of all types, interest patterns, etc. A technical consultant will prove invaluable in the selection of proper tests, since care must be taken to discriminate between some published claims of test efficiency and the actual facts.

TEST APPROACHES

Arbitrarily one may classify the methods by which tests are used into four general divisions, although there is considerable overlapping between such divisions. The first of these is the use of tests to predict success on a particular job or to measure a definite pattern of ability. This method requires that the tests be carefully developed and standardized, which means (as will be discussed in the following pages) that intensive research has demonstrated the degree to which certain tests predict success or failure on a certain job. The second method is the so-called clinical approach in which individuals are subjected to a number of tests, all of which have been shown to measure certain abilities in other situations—but the results of the tests in this case have not been tied in closely with actual performance on the job. The third method involves giving tests to new employees after they are hired in order to check the value of the tests by follow-up of the job success of these individuals. In the fourth method, tests are arbitrarily chosen, possibly on the basis of the success of other companies with them. These tests are then administered to all applicants as a rough screen with the intention of eliminating the least qualified applicants.

In discussing methods of using tests, illustrations will be cited from the experience of several industrial companies, and those who are interested should refer to the original sources of this material for complete details. However, it will be sufficient for the purpose of this report merely to mention the salient points of these studies in test administration.

Also, it will be of interest to examine critically each of these test methods from the following points of view:

1. The applicability of the method to various industrial situations.
2. The time necessarily spent in research before the tests are available for use.

3. The research, skill and experience required in the introduction and interpretation of the tests.
4. The value of the results obtained.
5. Cost.

In considering the first of these methods, it will be well to keep in mind the research procedure for sound test practice. Viteles[1] has listed eight steps to which reference will be made. These steps are:

1. Justification for the use of tests. Is there a real need?
2. Obtaining management and worker cooperation.
3. Job analysis to determine qualities underlying successful performance on the job in question.
4. Development of standards of job success—the criteria.
5. Selection of experimental groups with which to try out the tests.
6. Selection of tests.
7. Comparison of tests scores of experimental group with the criteria to prove value of tests.
8. Application of valid tests to selection problem.

METHOD ONE

Viteles' study of the selection of electric sub-station operators is an excellent illustration of the use of this method. In the Philadelphia Electric Company it was customary to promote assistant operators to jobs as substation operators on the basis of their performance as assistants. Even with this basis of selection, it had been noted that a considerable number of costly errors occurred.

The need for better selection was therefore obvious, and the management agreed to the study. The interest and cooperation of the men were gained, and their job security was assured. Then the following steps were taken to solve the problem:

1. A job analysis was completed in which such factors as ability to learn and recall combinations of switching operations, accuracy in following directions, ability to comprehend instructions, persistence, judgment and analysis in solving a new problem and various qualities of temperament were found to be important.

2. Viteles selected two series of four and five tests, respectively, the choice of which depended upon his consideration of the job analysis.

3. Two criteria or measures of performance on the job were selected:
   a. Ratings dividing the experimental group: best workers, average workers and poor workers.

[1] Viteles, M. S., *Industrial Psychology*, W. W. Norton & Company, Inc., New York, 1932.

b. An actual record of the operating errors committed by these employees.

4. Viteles chose an experimental group of 84 individuals who were employed on the jobs at that time.

A trial of these tests with this experimental group showed that the 30 employees who had the better test scores made only .5 operating errors per man, while the 54 men with poorest results had .94 operating errors per man. After reassignment of the individual workers, based on test results, the total number of operating errors was sharply reduced, so that at the present time it is not uncommon for a month or more to pass without an error being made.

A study employing the same method has been undertaken at The Atlantic Refining Company. A detailed report of this study was presented at a meeting of the National Industrial Conference Board.[2] In brief, however, the problem was to select girls as operators in a central typing department. The job analysis revealed not only that typing skill was important, but also that it was necessary to evaluate the effect of the environment, supervision, and the personality interests, etc., of the operators.

There were 40 to 50 operators in the experimental group, and two criteria of job success were used. The criteria chosen were actual number of key-strokes completed per minute and supervisory ratings. As a result of the study, a battery of tests was chosen to predict success in this particular department.

Studies of the type illustrated by these two examples are numerous, and in many cases the results give ample proof of the value of the method. Through such a procedure the efficiency of the tests can be measured and critical selection scores can be determined. However, such research projects take time to complete, and it is not unusual to find that a year to two years of intensive effort is necessary. With such a procedure, it is also essential that the individual conducting the research be well trained and have considerable industrial experience. The cost of such a project is not exorbitant, the major factor being the salaries of the research technicians. The results obtained, however, justify the time and cost, since they permit adequate evaluation of the attendant error in measurement.

METHOD TWO

Method Two, the clinical approach, differs from the preceding method in that in general no criteria are available. Thus, in The Atlantic Refining

[2] *The Use of Tests in Employment and Promotion*, Studies in Personnel Policy #14, National Industrial Conference Board, Inc., New York, 1939, p. 8.

Company, tests have been used in a restricted manner—"In our employment work rather than depend solely upon the interview, etc."[3]

The first step has consisted of a job analysis to determine in detail the factors important for success in various positions. The second step has been to review the literature on the subject of tests to determine what studies have been made in similar situations.

Tests are then chosen which are believed to be valid and reliable predictors of the factors established by the job analysis, and these tests are administered to the applicants for the job. The results, both quantitative (the score) and qualitative (general observations), must be interpreted by the examiner, since there is no criterion of successful job performance against which to check the value of the tests.

> "Tests are being used successfully in this manner by many employment officers, the degree of success depending to a large extent upon the adherence to the procedure described in this paper or to an analogous procedure. However, those who intend to use tests in this manner should appreciate certain limiting factors. Therefore, . . . the following list of such factors is cited:
>
> "1. Tests are not available, and there is usually no time to construct the tests required to predict many of the psychologically fundamental factors developed by a particular job analysis. It is very doubtful if any test measures a single ability, such as discrimination, concentration, etc., and this complicates the problem of interpreting the results.
>
> "2. The probable error of the score of many tests is fairly large. If this is not appreciated, it offers the opportunity of permitting a gross error in interpretation.
>
> "3. The critical scores (that is, the scores dividing those with the greater chance of success from those with the lesser chance) are not known and are usually not obtainable.
>
> "4. The results are in direct proportion to the training, skill and experience of those who make the interpretations.
>
> "5. The results can be used only as suggestions and not as conclusive answers, since there is no way of proving the value of the results at the time at which they are used."[4]

Obviously the time spent in research is reduced to a minimum, and the cost involved is largely the salary of the technicians. I should reiterate,

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[3] *Experience with Employment Tests*, Studies in Personnel Policy #32, National Industrial Conference Board, Inc., New York, 1941.
[4] Ibid.

however, that the interpretation of the results is extremely difficult and should not be attempted by an inexperienced or untrained examiner.

METHOD THREE

The third, or follow-up, method of using tests differs from the first method in that there is no experimental group nor criteria with which to validate the tests. A job analysis is made, and prospective criteria of success on the job are outlined. However, the tests are administered after the employment of the individuals concerned, and the test results should not be a factor in the selective process. When a period of time has elapsed, possibly as much as five years, the test scores are compared with the criteria scores which have been accumulated during the interval. Only those tests or parts of tests are retained which predicted the criteria scores.

A study now in progress at The Atlantic Refining Company can be used as an illustration of this method. A need has existed for improving the selection of individuals for sales work. Under current economic conditions, this is not a pressing problem, but in anticipation of expansion after the war it seems advisable to carry on research on this problem now. A number of tests of varying types are being administered to individuals selected for sales work. The predictive efficiency of these tests in this situation is not known, but the results are carefully filed away to be compared ultimately with the performance of these employees on the jobs to which they are assigned.

While the tests are not of great value at this time, it is hoped that after a period of two years sufficient data will be collected to determine which tests, or parts of tests, will be of value. Ultimately, therefore, we hope to obtain a valid selective device.

This method, and modifications of this method, have been used by a number of companies. One definite point in favor of this approach is that data are accumulated at time of employment, that is, at the time when the individuals are starting out on their new jobs. In Method One, it will be recalled, individuals were tested after they had proved to be successful or unsuccessful on their jobs. This follow-up method obtains a test record at time of employment and thus avoids introducing another variable.

The follow-up method differs in few other respects from the first method. Cost, research skill required, and validity of the results are identical with or superior to those of the first method. The follow-up method, however, may require longer periods of time for research.

METHOD FOUR

Many industries have been and are now faced with a tremendous expansion program. Some of those with which I have had personal contact were formerly small companies with a low turnover rate and little or no

need for an elaborate employment program. However, many of the managements of such plants astutely realized the need for better selection and were familiar with tests. Quite naturally, when the expansion program justified the use of tests, the requirements of their situation were such that tests, to be of practical value, had to function immediately and with a relatively small amount of administrative effort and skill.

As may be readily seen, no one of the methods previously discussed was applicable. The need was so great, however, that all concerned were reluctant to abandon the use of tests if they could be utilized even with reduced efficiency. As a result, several companies, acting under the direction of skilled technicians, have arbitrarily chosen several tests and administered them to all applicants before employing them. Those applicants who failed to meet arbitrarily chosen standards were eliminated, even though this may have worked some injustice or hardship on a particular applicant.

Charles Reitell, of Stevenson, Jordan & Harrison, described such a procedure in an important war industry. This company, a manufacturer of metal specialties, was required to expand almost overnight. The supply of skilled metal workers was rapidly exhausted, and subsequently it became almost impossible to hire anyone with any mechanical experience. The problem, therefore, resolved itself into the selection, from a large unskilled group of people, of those individuals most easily trained to undertake such work. Two tests were chosen as a result of the consultant's experience in other situations. One of these, a so-called general intelligence test, was designed to eliminate those incapable of readily grasping job instruction and the supplementary instruction in mathematics, etc. The other, a paper-and-pencil test, designed to measure mechanical ability, was used to eliminate those with the least aptitude for dealing with mechanical problems.

Selection standards were arbitrarily set, and those individuals who did poorly in both tests were eliminated from further consideration. Those who did well in both tests were considered potential candidates for highly skilled or supervisory positions. Those whose scores were high in the mechanical test and low in the general test were trained to become production specialists. Conversely, those applicants with low mechanical test scores but high general scores were diverted into the clerical field or allied endeavors. This division of applicants can be graphically portrayed as follows:

Mechanical Test	General Intelligence Test
Production Specialists	Potential Supervisors and Highly Skilled Workers
Rejected Applicants	Clerical Workers and Allied Fields

	METHOD #1	METHOD #2	METHOD #3	METHOD #4
	Standardization of tests to meet requirements of a particular situation.	"Clinical" Method	"Follow-up" Method	Arbitrary choice of tests and standards, based on experience in other situations.
Applicability	Limited to those situations in which a criterion is available, and by the number of cases and stability of job.	Any Situation.	Any situation—provided there is a sufficient number of cases.	Companies faced with necessity for hiring large groups.
Research Time	Long. Possibly over a period of years.	Negligible.	Longest of any method.	Negligible.
Research, Skill and Experience	High degree.	Highest degree of any method.	High degree.	High degree required in choice of tests and standards.
Validity of Results	High degree.	Practically impossible to prove.	High degree.	Impossible to prove.
Cost	Salaries of technicians. Cost of tests and scoring. Time of others.	Salaries of technicians. Cost of tests and scoring. Employees' time spent taking tests.	Salaries of technicians. Cost of tests and scoring.	Cost of tests and scoring. Salary of technician (consultant).

Other examples could be cited, but since the pattern of all is identical, little would be gained. However, it is important to judge this method from the five points of view previously taken in consideration of other methods. This method could be applied to almost any industrial situation, since no criteria are obtained against which to check the results. The time spent in research is negligible, and the cost represents, in general, the consultant's fee plus the cost of the tests, the scoring, and the administration thereof. Actually, therefore, the cost is far from excessive. Judged solely by these criteria, this method is attractive.

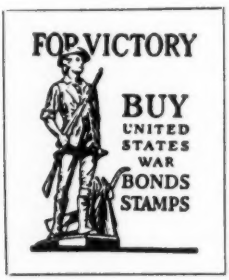
However, no one should attempt to use tests in this manner without competent advice. The selection of the tests and the choice of standards is a task requiring experience and training. Finally—and this is the most serious criticism—when such a method is used there is no way of proving that the tests are valid.

The advantages of the various methods are summarized in tabular form on the preceding page.

SUMMARY

The following conclusions seem evident:

1. No method excels in every respect.
2. Those methods requiring the least skill and research time produce the least valid results.
3. Only through use of Methods One or Three can the test results be conclusively proved to be valid.
4. The use of tests should be restricted to those with specific training and experience in this field.
5. The cost of test procedure is not exorbitant.
6. Tests offer the only practicable solution to the problem of better selection of employees.



TEACHING MANAGEMENT IN WARTIME

Teaching Methods, Visual Aids and Equipment

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Rapid expansion of management training programs in both universities and industry has necessitated the recruitment of a huge corps of instructors, many of them practical management men who are teaching for the first time. Dr. Karabasz here discusses a number of techniques which have improved the effectiveness of these inexperienced instructors, and describes a variety of visual aids that can facilitate their work. Of particular interest to many plant training men will be the devices designed by the author to expedite the teaching of time and motion study.

THE war has intensified and speeded the management training programs of both universities and industry. The demand for the upgrading of present employees of war industries and for the training of persons from non-war industries for the purpose of transferring them to assume management responsibilities in war industries has placed a premium upon good management teaching. This rapid expansion came at a time when the professional teachers of management were already overloaded, and consequently necessitated the use of management experts who had had little teaching experience but who possessed the qualities of potentially good teachers. The technical expert who knows his subject, but whose ability to explain it to his students is limited, cannot fill the present-day need for management teachers. Neither students nor industry can afford to waste time muddling through a subject where the "blind lead the blind" and where the student learns little other than what is contained in a textbook. Good teaching involves creating in students a desire to learn a particular subject and presenting the material in such a way that it is really understood and absorbed by the students. In addition, the students must be given sufficient practice in the solution of practical problems to acquaint them with the subject in more than a cursory manner.

Courses in Industrial Management have been given in the Wharton School of Finance and Commerce of the University of Pennsylvania since before World War I. Frederick W. Taylor, Carl Barth, Colonel H. K. Hathaway, Morris L. Cooke, and many other pioneers in the management

movement were among its earliest lecturers in Scientific Management. In the interval between the two World Wars, management training was expanded to include, in addition to the courses in Industrial Management, courses in Personnel Management, Industrial Policy, Management Field Work, and Management Research. The Management Department has always been one of the largest departments in the institution.

With the beginning of defense production, the University was called upon to expand the training of its full-time management students to include such specific courses as Motion and Time Study, Production Control, Plant Layout, and Industrial Procurement. At the same time, there was a large increase in the number of full-time management students, the management courses were accelerated, and the University was asked to cooperate with the U. S. Office of Education (Engineering Defense Training) for the management training of defense workers in the Philadelphia area.

In order to accomplish this huge program, it was necessary:

1. To recruit a number of management teachers, particularly for defense courses, from among the practical management men in the area;

2. To plan courses suited to the particular needs of the industries in the area;

3. To place special emphasis upon teaching and teaching methods, particularly in view of the large number of men teaching management for the first time;

4. To develop visual aids and equipment to facilitate rapid training.

It is with points 3 and 4 above that this article is concerned.

TEACHING AND TEACHING METHODS

The ability to teach a subject does not necessarily accompany expertness in that subject. Some of the greatest specialists in particular fields are also the poorest teachers in those fields. If the fundamentals of a subject are to be imparted to a group of persons who know little or nothing about it, it is highly important that the instructor proceed in a logical manner, omitting none of the steps in the chain of thought that leads to understanding. He must first determine the extent of knowledge of the subject held by the members of his class and with this as a foundation build carefully, always making certain that all the members of the class are following him. The pace should be neither too fast nor too slow. The former will result in lack of understanding; the latter, in a loss of interest and a waste of time.

The outside expert with no teaching experience is likely to assume that his group knows more than it does; consequently, he may omit certain

important fundamental considerations, or place too much emphasis upon some one phase of the subject which interests him particularly, only to find that he does not have sufficient time to complete the work assigned for the day.

We have found the following techniques to be valuable in increasing the teaching effectiveness of outside experts with no teaching experience:

1. *Careful and detailed planning of the entire course.* A complete schedule by days with assignments to be covered is very valuable in securing a well-balanced course designed to fulfil a particular objective or series of objectives. Time spent in this aspect of teaching is well spent indeed.

2. *The preparation of a "discussion plan" or manual for each session.* This makes available to the expert the knowledge of teaching and teaching methods of those who have had years of experience as professional management teachers. Just as the entire course is planned in advance, so is the individual session. The "discussion plan" sent before each session to each instructor states briefly: (1) the purpose of the discussion; (2) the points to be covered; (3) suggestions as to how these points can be best taught, including suggested questions to be asked to develop the points; (4) problems, case material, charts, and illustrations to be used; (5) methods of summarizing the material covered so that the discussion of the day will be tied together as a unit and impressed upon the minds of the students. The case material and class problems are of particular importance.

No attempt has been made to compel each instructor to use the "discussion plan" sent him. These are merely prepared as suggested plans to assist those instructors who care to use them. However, they have been so well received and are regarded so highly by the instructors that at the present time none would care to teach without them.

3. *Regular meetings of the instructors in each course.* These meetings are the means of bringing all instructors together to discuss their mutual teaching problems. They are the agency by which experiences are exchanged and suggestions received for the improvement of courses. These meetings, therefore, enable the group to review critically the sessions taught and to appraise the effectiveness of the material and teaching methods used; in addition, they facilitate preparation of the sessions immediately ahead.

4. *Reports after each class session.* We have found that it is desirable to secure a report from the instructor immediately after each class session. At that time some of the most valuable suggestions as to the adequacy of the assignment covered and teaching methods used are likely to be made. This report is made on a self-addressed postal card and requires only a few minutes to prepare.

VISUAL AIDS AND EQUIPMENT

Visual aids in the teaching of management have always been considered valuable. However, because of the need for speed in war training and because the emphasis in war class teaching is upon specific training rather than general education, they have become particularly important. The Chinese proverb, "One picture is worth a thousand words," is as true now as it ever was.

As valuable as visual aids may be, it must always be remembered that they are a *supplement* to teaching and not a substitute for it. One occasionally hears criticism of various visual aids which have been employed. Analysis will generally show that they were used to do the entire job of teaching instead of assisting in that work. No visual aid developed can do a complete job of teaching, and visual aids have generally not been developed to supplant the teacher.

Among the types of visual aids which can be used effectively in the teaching of general management are the following:

1. Projection Equipment
   (a) 16 mm. sound motion picture projector
   (b) 16 mm. silent motion picture projector
   (c) 8 mm. silent motion picture projector
   (d) 35 mm. sound-slide film projector
   (e) 35 mm. slide film projector
   (f) Stereopticon projectors
   (g) Delineascope for the projection of opaque material
2. Wall charts to illustrate various features of management, including charts of the following types:
   (a) Photostats
   (b) Blueprints
   (c) Line drawings
3. Forms
4. Photographs
5. Exhibits of equipment

Projection Equipment: The most valuable single piece of projection equipment is the 16 mm. motion picture sound projector. If a school or factory has no motion picture equipment at the present time and is considering its purchase, it should in practically every instance purchase 16 mm. sound equipment. Most of the best films produced at the present time are 16 mm. sound films, and failure to own this type of equipment would preclude their use. Such equipment can also be used to project silent films, but the use of sound film on silent equipment would spoil the film. Many

companies have produced 16 mm. sound motion pictures of their plant operations and industry activities, and these films contain excellent illustrative material for the teaching of management. In addition, many of the really effective films now being used for the teaching of individual operations are of the 16 mm. sound type. The splendid group of machine-tool films and shipbuilding films produced under the auspices of the U. S. Office of Education are of this type.

The next most important type of projection equipment is the 35 mm. sound-slide film projector. This equipment projects pictures on the screen from a 35 mm. film strip while a phonograph record provides the explanation and sound effects. There are a number of excellent films of this type available for supervisory, safety, first-aid and job training.

The successful use of motion picture projection equipment is dependent upon the observance of the following points:

(1) It should *supplement* the class teaching and not be used as a substitute for it. This point has been mentioned.

(2) It should be tied in directly with the work of the class. Films should not be shown merely because they are interesting; they should be shown because they either clarify or enlarge upon certain features of the work which the class is discussing, and do this more effectively and more quickly than would be possible by elaborate explanations.

(3) The instructor should be thoroughly familiar with the contents of the film before it is shown the class. He should prepare the class for what it is to see and be prepared to discuss with it what it has seen, thus integrating the film with the teaching program.

(4) The conditions under which the film is shown should be proper. A screen of good quality should be used, the room should be properly darkened, and loudspeakers should be placed so that all will hear well. Care should be taken that the correct current is available. A portable screen and adequate extension cords will enhance flexibility in projecting the film and in seating the audience.

(5) The equipment should be set up and tested *before* the class meets so that no loss of time will occur in setting up the machine and threading the film.

(6) The projector should be in charge of an *experienced operator.* Nothing detracts from a showing quite so much as stoppage of the machine caused by inexpert operation. This also causes breakage and entails high repair costs. The operator should be provided with spare lamps, tubes and fuses in case they should be needed.

(7) A sound motion picture projector represents a substantial invest-

ment, and it should be inspected and oiled at regular intervals so that it will give high-grade performance over a long period of time.

(8) If the entire session is not devoted to the showing of the film, the equipment should not be packed up while the class awaits the continuation of the session. Packing the equipment while the class waits to go on with the session results in a waste of time.

Wall Charts: Charts illustrating various features of the assignment are valuable as a teaching aid. The type or lettering on them should be large enough to be read easily by all students in the class, even by those on the last row. They should be hung in a position in the front of the classroom where they can be seen by the students without craning of necks or stretching forward. Organization charts, layout diagrams, procedures, etc., may be illustrated in this manner.

Forms: Forms and records used by various companies can frequently be used to good advantage in discussing certain subjects. Here, if possible, they should be enlarged by photostating or other means so that they can be readily seen by the members of the class. Furthermore, filled-in forms are more valuable than blank forms.

Photographs: Excellent photographs of various physical aspects of the plant are frequently available. These may be mounted on large plywood boards, each photograph with a complete description. The students are urged to examine these at their leisure. If a photograph can be used effectively during a lecture, it can be projected on a screen by means of a delineascope.

Exhibits of Equipment: From time to time it seems desirable to bring a piece of equipment to the classroom to illustrate its use. For example, in discussing inspection, various types of gauges can be brought to class; in discussing industrial lighting, a lightmeter can be used and direct readings of intensity in foot-candles made; and a stopwatch and observation board may be used in conjunction with motion and time study. For the teaching of production control and expediting, sections of various types of planning department and shop bulletin boards may be used.

MOTION AND TIME STUDY

In the training of students in motion and time study, we have felt that teaching the use of a stopwatch is perhaps the least important part of the course, although by the time a student has completed the course he has had ample opportunity to use a stopwatch and is thoroughly familiar with it. In the beginning, however, all the emphasis is placed upon motion and methods study in order to discourage the idea that all there is to time study is the reading of the stopwatch. After the student has mastered the theory

and has had some practice in the laboratory, he is required to select a project, preferably from his own plant, develop a process chart and simo chart of the present method, take an 8 mm. motion picture of the present method, analyze the loop of the present method, develop an improved method (this frequently requires the construction of a special jig or fixture), take a picture of the improved method, develop a simo chart of this method, time-study it, set a rate, and write a savings report, embodying in it comparison tables showing savings in time and increases in production.

Defense and war production brought with them a demand for the in-service training of many time study men and ratesetters. In order to make this training as effective as possible, a number of pieces of special equipment were constructed.

Normal Working Area Board: A normal working area board properly laid out in color shows the effective working area for the utilization of motions in the lower categories. This type of board is of considerable value when students are working on their individual projects, and assists in illustrating the laws of motion and in the laying out of workplaces.

Motion Study Table Hood: Where a number of students in a single darkened room are working on individual loop analysis of their own projects, it is impossible for them to record frame counts and motions unless each is equipped with an individual light. In addition, if a large group of students is projecting loops on individual screens in the same room, with no partitions between them, there is likely to be a considerable amount of confusion. In order to avoid such confusion and the need for darkening a room in the early summer evenings, thereby reducing the ventilation, a table hood was developed. This hood consists of a small table screen painted with aluminum paint and entirely enclosed by plywood sides, top and end. Into the end piece of plywood three holes are cut, one through which the picture is projected and two others through which the students can see. Since it is not necessary to darken the room to project the loops, daylight or artificial light may be used in the room, thus making possible the recording of frame counts and motions. This also makes possible more effective teaching by the instructor and the laboratory assistants.

Slide Rule: The in-service motion and time study classes sometimes include students who are unfamiliar with the operation of a slide rule. In the introductory sessions we have found that a large model slide rule mounted on a stand in front of the class is a valuable time-saver in explaining slide-rule operation to students. The previous method required a general explanation and then an individual inspection of the method used by each student. We have found that the explanation utilizing the large

slide rule reduces total instruction time and increases the effectiveness of the teaching.

Individual Jigs and Fixtures: To illustrate the manner in which proper application of the laws of motion can improve methods and reduce time, several operations involving the assembly of well-known items were studied and for each a special jig was constructed. These jigs are valuable in illustrating the savings that may be effected by the proper use of methods study. They serve as models of what can be accomplished and illustrate the various steps in motion, methods and time study.

Special Cabinets for Storing Motion and Time Study Equipment: Motion and time study equipment is valuable and must be properly safeguarded. In addition, if the classroom in which it is to be used is some distance from where the equipment is stored, there are bound to be both a considerable amount of time consumed in handling and some loss of control in safeguarding it. To overcome this problem, we have built a special cabinet on large casters in which the equipment used by one class can be properly stored and transported. This cabinet is pushed to the classroom where the equipment is used, and the issue of the equipment to students is controlled by a laboratory assistant. The cabinet is so constructed that the absence of any piece of equipment is denoted by a corresponding empty space. Before the class is dismissed, all equipment must be returned and replaced in the cabinet.

PLANT LAYOUT

There has been a demand for students with special training in plant layout. Since we have had as many as 100 students taking this course at the same time, we were confronted with the problem of providing adequate equipment for them. As the course is largely a problem course after the first few sessions, and since a problem usually extends beyond a single session, it is essential that the problems in process by one group of students be not disturbed by the next group using the same laboratory. The room in which the course is given is equipped with 3′ x 6′ tables. The students are given compo board table tops of the same size. When a particular session is completed, students fasten their templates by means of scotch tape and place their table tops in a large cabinet. This cabinet has been specially constructed and contains numbered compartments corresponding to the numbered table tops. In this manner it is possible to use the same tables for a number of layout classes.

We have also found that much time can be saved in a plant layout course by supplying students with blueprints of the buildings or departments to be arranged or rearranged instead of compelling them to draw

the floor plans. In this manner time can be saved for discussion of the more important aspects of the course.

Another time-saving device is to supply students with pre-cut templates after they have had the experience of preparing the templates for the first problem.

A valuable aid in visualizing plant layout problems is the use of scale models. We had a number of such models constructed of plexiglass at a time when this material was still available for non-military use. A transparent material such as this aids the student in visualizing the location of machinery and equipment in relation to the fixed points in the layout. When these models are used in the solution of layout problems, they are constructed to the scale of one-fourth inch to the foot; when the models are used to illustrate types of buildings and features of construction, they are constructed to the scale of one-eighth inch to the foot.

CONCLUSION

The need for rapid management training during this war has stimulated a re-examination of management teaching methods. Out of this re-examination will come, to an increasingly greater degree than heretofore, an emphasis upon the use of visual aids in management teaching. The experience with their use to date has been most gratifying. However, such aids must not be expected to provide a substitute for good teaching. No substitute has been or probably ever will be found for good teachers. Visual aids of all kinds, however, can *supplement* the efforts of a good teacher and make his instruction more effective.

Stabilization Plan Cuts Turnover 50 Per Cent

LABOR turnover has been reduced 50 per cent, absenteeism cut drastically, and labor piracy practically eliminated in war production plants in the Louisville, Ky., area as a result of the labor stabilization plan introduced there last November by the War Manpower Commission.

As each worker must obtain from his employer a certificate of separation if he wishes to change his job, a number of employers have inaugurated a system of "quit interviews." Thus the stabilization plan not only controls turnover directly but restricts it indirectly through the adoption of sounder personnel practices.

The Review Unit of USES, to which dissatisfied employees or employers take their cases, is reported to have been "almost completely successful" in dealing with decisions as to whether certificates of separation should be granted. Of 100 review cases, 56 were granted certificates leaving them free to accept any essential job, 33 were referred back to their original employers, four were directed to specific jobs, and seven refused to continue their jobs. Thirty-five were granted the certificates because they were employed on jobs that did not utilize their full skill.

—*Steel* 3/1/43

INDUSTRIAL RELATIONS ORGANIZATION AND PERSONNEL ADMINISTRATION

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What distinction should be drawn between the functions of an industrial relations organization and those of a personnel department? In many cases these terms are used interchangeably, while in others a distinction exists but overlapping and duplication of activities are prevalent. Patently, personnel administration is but one major phase of industrial relations, according to the author of this paper, which was originally presented before the Third Texas Personnel Conference. Mr. Harris describes here the industrial relations organization of one large company, examining in detail the distinct functions and operations of the organization's Personnel Section.

THE inauguration and successful administration of a sound program of industrial relations is one of the most important responsibilities of management. This paper will attempt to outline the broad scope of activities embraced by an industrial relations program, with particular reference to the functions and operations of the Personnel Section of the industrial relations organization.

Before discussing the physical setup of an industrial relations organization, it seems appropriate to give some thought to certain basic considerations. In the first place, a definite industrial relations policy must have been adopted; it must have been fairly conceived; it must have emanated from or at least must have the approval and active support of the board of directors and of highest executive management; it should lean toward the generous side, with due consideration to competition and the economics of the business; it should be carefully written in clear and understandable language so that it will be uniformly interpreted by executive, supervisory and rank-and-file employees; and it should be made available in written form to every employee. In the second place, the policy must be administered with meticulous care, honestly and sincerely, and in a uniform manner so that any employee or group of employees will receive neither better nor worse treatment than any other employee or group of employees similarly situated. Having published an industrial relations policy, the next most important step is the education of every level of supervision to the end that the policy will be fully and fairly administered throughout the entire organization.

At the outset let us bear in mind that, as management formulates and adopts industrial relations policies and thus exercises control over the inauguration of the program, it must, with few exceptions, thereafter carefully supervise the administration and maintenance of the program if it is to be fully effective. In other words, management, and management alone, can do a successful job of administering industrial relations. The job cannot be done by any individual or by any staff organization, though certain individuals well trained in industrial relations matters and certain staff organizations can be of great assistance to management in this respect. If the program has not been accorded the active interest and genuine support of management from top to bottom it may fail dismally, even though the program *per se* seems to be a good one. The administration of industrial relations should extend from the very top to the very lowest level of supervision and unless top management—including the chief executive of the company—is on the alert and in earnest in seeing that the program is carried out fully and fairly, the machinery is liable to bog down and stall somewhere in the ranks of intermediary or lower supervision.

METHODS OF ADMINISTRATION

Recognizing the truths just mentioned, some of the more successful industrial organizations have reposed in their president full responsibility for building and maintaining good industrial relations, just as he is held responsible for the successful operation of the company in other respects. In some of the smaller companies, it is possible for the president or the general manager to know and to contact frequently the personnel of the entire organization. This form of administration is known as the direct contact method. It is most valuable in small organizations where direct contact is possible—especially so if the chief executive really has the employees' best interest at heart, and if he is friendly, fair, approachable, and makes it easy for individual employees to see him and to discuss their problems privately with him. Other methods that have been used in an effort to make industrial relations programs effective are: administration through line management; through each individual foreman; through some individual appointed by management; through the employment or personnel department; through a management committee; through an employee committee; through a joint management-employee committee; through an industrial relations department. Some of the foregoing methods are good, and others are not so good; but, regardless of what method is employed, it is well to bear in mind that fairness and honesty in all things in all the everyday contacts between management and employees are of the greatest importance.

A TYPICAL SETUP

For the purpose of this discussion, let us consider how an industrial relations organization might be set up in a large industrial company engaged in various operations located in communities scattered over a large area, and employing 10,000 or more workers. The board of directors probably would hold the president of the company responsible for maintaining good industrial relations. Since the operations of the company are diversified, the president probably would enlist the counsel and aid of the directors or managers who are in charge of the various operating branches. These directors, with the president as chairman, might form a committee, known as the Industrial Relations Committee, whose duty it would be to formulate and effectuate policies on all matters having to do with employer-employee relations, such as employment, rates of pay, promotions, demotions, terminations, vacations, employee benefits, safety, medical care, training, and other items relating to industrial relations. In most companies with industrial relations committees, their recommendations are subject to review and approval or disapproval by the board of directors.

THE IDEAL INDUSTRIAL RELATIONS MANAGER

If the proper control of industrial relations is to be maintained to conform with the policies adopted by the board, and if uniformity is to be attained throughout the company, all industrial relations matters should be coordinated through one central agency, generally called the Industrial Relations Department. The management of that department should be placed in capable and trustworthy hands. It might be well at this point to digress to the extent of mentioning characteristics that would be valuable in the person selected to manage this department. He should have good actual knowledge of the operations of the company and should be well and favorably known throughout the organization. Unless he commands the respect of both management and employees, he will fail to accomplish missions of value to both, since he is frequently the first point of contact and sometimes the only effective means of liaison between management and employees. He must respect and protect the points of view and confidences of both. He must be tolerant and extremely careful that his appraisals and judgments are accurate and fair both to employees and to the company. He will fail if he is biased toward either side. If he can see a problem only with management's eyes, the chances are that men in the ranks will grow to regard him as only another adjunct of management, will not expect to get any help from him, and thus will not confide in and counsel with him. On the other hand, if he sees problems only from the men's viewpoint, his judgments might be so warped as to destroy management confidence and cooper-

ation. In either case, his effectiveness in promoting mutual trust and harmonious relationships will be destroyed. He must be courageous enough to report things exactly as he finds them, and to tell management things it might not want to hear. In like manner, when a decision is fair, even though it be unfavorable to employees, he should be courageous enough to take the company's side, to define its decision, and to explain the reason for and the justice of its action. Since he is adviser both to the management and to employees on all matters of industrial relations, he must be fair to both. Through his efforts, supervisory conferences and meetings with employee groups should be promoted in order to educate both not only on the content of company policies but on the reasons for their adoption. Such educational efforts directed toward supervisory and employee groups help build mutual confidence and proper respect of each for the viewpoints and aims of the other.

In addition to managing the routine work of his department, an industrial relations manager is charged with the responsibility of keeping management informed of all events and trends of interest in his field. In a large organization with diversified and scattered operations, it will probably be advisable to have regional industrial relations managers, who should advise and assist, and be primarily accountable to, local managements for the handling of local industrial relations matters.

In a company such as that now under consideration, an Industrial Relations Department set up along the following lines should be able to do an effective job:

Administrative Section

The personnel of the Administrative Section ordinarily would consist of the industrial relations manager, the assistant industrial relations manager, the necessary clerical organization, and the regional industrial relations managers located in the outlying plants of the company. The functions of the Administrative Section are to advise management and employees concerning industrial relations matters. In a company operating on the decentralized control plan, regional managers are primarily responsible to local management, and secondarily responsible to the industrial relations manager of the company. However, the Administrative Section keeps them advised, as it seeks to keep management and employees advised, of changes in or additions to industrial relations policies; of events and trends in industrial relations matters within and outside the company; of legislation affecting industrial relations, such as the National Labor Relations Act, the Walsh-Healey Act, the Fair Labor Standards Act, Social Security Act, etc. This Section works with the company lawyers in an endeavor

to interpret the various statutes as their operation affects industrial relations policies and practices in the company. While orders with respect to these matters are put into effect by management through the regular line of authority, the Administrative Section usually prepares the necessary letters, bulletins, etc. This Section publishes and keeps up to date all instructions with respect to policies and procedures to be followed in the administration of the industrial relations program. It handles a rather extensive correspondence, both internal and external, on industrial relations matters. This service includes information, and advice both to management and to employees on questions relating to industrial relations. The manager and assistant manager exercise supervision and control over the operation of the entire Industrial Relations Department. The manager is secretary of the Industrial Relations Committee and furnishes that committee with such information, service and advice as it requires.

The industrial relations manager, the assistant manager, or a regional manager usually attends meetings between representatives of employees and management. They act in advisory capacity to both employees and management in all collective dealing and other matters of mutual interest.

Medical Section

The personnel of the Medical Section consists of the chief physician, assistant chief physician, physicians located at larger plants and outlying operations, nurses, technicians, hospital attendants and orderlies (if there are company hospitals), and the necessary clerical organization. The functions of this Section are to give entrance physical examinations, periodic physical examinations and medical advice to such employees as may wish the service, such additional physical examinations as may from time to time be required by the management, and first-aid treatments; to follow up in accident cases; to make diagnoses in cases of ordinary illness and occupational diseases; to direct the promotion of personal hygiene; to assist in epidemic prevention; to direct and supervise visiting nurse and home service; to carry on research and make health reports; to conduct emergency treatment; to give medical advice and to recommend outside medical service to employees who wish such advice; to assume responsibility for sanitation and the elimination of occupational hazards to health; to supervise water analysis and supply; and to advise on all matters related to health and sanitation throughout the company.

Safety Section

The personnel of this Section consists of the chief safety engineer, an assistant chief safety engineer, regional safety engineers, first-aid instructors, and the necessary clerical organization. This Section is responsible for the

administration and handling of all matters pertaining to safety. It inspects design, quality, quantity and adaptability of equipment and material from the standpoint of safety, and makes such recommendations for use as seem desirable; conducts or supervises safety meetings in the various plants and operating areas; helps management plan such meetings; carries on an educational program in safety and accident prevention among employees and members of management; makes recommendations for the elimination of hazards to safety; develops and publishes statistics on safety; assists management in investigating and making written reports on industrial injuries; handles all safety supplies and equipment; and keeps management and employees informed on events and trends in the field of safety. This Section keeps abreast of safety matters, techniques and practices within and outside the company. It develops, secures management approval of, publishes and distributes manuals of safe practices in all operating departments.

Training Section

This Section is composed of a training supervisor, the necessary instructors and assistants, and clerical personnel. The functions of this Section are apprenticeship and job instruction and training; executive, supervisory and foremanship training; general and technical training; and the training of office groups. This Section is responsible for the administration of all matters pertaining to training of employees, supervisors and executives. It often assists management in planning and conducting meetings. With the assistance of engineers, scientists and other specialists, it prepares necessary material and either carries on or assists management in carrying on special training courses on various subjects as requested from time to time by management.

Employee Benefit Section

The personnel of this Section consists of a supervisor, an assistant supervisor, a secretary, and the necessary clerical organization. The functions of the Section are to administer, interpret, and keep necessary records of employee benefit plans, such as sickness benefits, accident benefits, death benefits, group life insurance, group hospitalization, pensions, vacations, thrift and savings plans, new ideas plans,* termination allowances, etc. This Section carries on a rather extensive correspondence with employees and others relating to the various employee benefit plans.

Job Evaluation, Wage and Salary Analysis, and Research Section

The personnel of this Section consists of a supervisor, an assistant supervisor, a secretary, and the necessary clerical help. Its functions are to

* The growing importance of employee suggestion plans has led many companies to set up a separate section and appoint a special supervisor to administer such plans.—EDITOR.

interpret wage and salary administration matters and policies to department heads and employees; to establish group salary classifications and to handle salary recommendations; to prepare reports and to maintain up-to-date information on rates of pay for all classifications and occupations in the company; to maintain up-to-date job descriptions, salary histories, and files in connection with wage and salary matters; to make individual job and rate studies and comparisons within the company and with other companies; to issue occupational code numbers and to maintain an occupational code manual; to maintain records and to report to management current information on changes in the cost of living, industrial rates of pay and earnings, and comparisons of the working policies, benefits, vacation and overtime policies, etc., of other companies and industries. The supervisor of this Section is secretary of the Salary Classification Committee.

Personnel Section

The Personnel Section consists of a supervisor, an assistant supervisor, interviewers, and the necessary clerical help. The functions of this Section are to maintain contacts with sources of labor supply; to interview, ascertain the qualifications of, and to classify applicants for employment; to make recommendations to management for selection and placement of employees; to introduce new employees to their jobs, and to instruct them on the general industrial relations policies of the company; to follow up new employees to ascertain whether or not they are fulfilling expectations; to keep an up-to-date list of surplus personnel of all classifications within the company, and to assist management in the transfer of such personnel to existing vacancies in other plants or departments of the company; to make recommendations to management on employment and reemployment; to maintain application files listing the best available applicants for each occupational classification; to answer all correspondence regarding employment; to handle the procedural administration of periodic ability ratings or performance records, and to review such forms when they are received in the Personnel Office from the operating departments; to cooperate with other companies in the placement of well-qualified applicants seeking employment; and to maintain complete personnel files on each employee of the company.

SELECTION ITS PRIMARY FUNCTION

It seems desirable to discuss the actual operation of this important Section in some detail. The principal function of the Personnel Section is the careful selection of employees to fit job requirements—the placement of the best-qualified person in each position. It will be seen that in order to

perform this function this Section should have accurate and up-to-date information on job analyses, specifications and standards. In some well-managed companies, a specification standard is prepared for each job classification in the company. These standards are of value not only in the efficient placement of new personnel to fill current job requirements, but also in the placement of personnel with potential qualifications for advancement to higher positions in the department. Moreover, a knowledge of job requirements and standards enables the personnel supervisor to assist management in the elimination of misfits—the removal of square pegs from round holes—and in finding jobs for competent surplus personnel. With knowledge of job specifications, it is often possible to arrange transfers of employees who are not needed in one department or who by education, temperament, physical qualities, etc., are unsuited for the jobs on which they are presently employed, but who might be, and frequently are, well fitted for valuable and efficient work in some other department, position or occupation in the company.

PERFORMANCE RATINGS AND PERSONNEL SURVEYS

Collateral with the knowledge of job requirements in order to effectuate transfer of personnel to positions where their efforts will be more productive, is a knowledge, acquired by systematic analysis, of the abilities, capacities, performance and progress of individuals in the company's employ. The personnel supervisor should handle the procedural administration of performance records or ability ratings; should receive and keep copies of these ratings; and should review and analyze the ratings as they are received. A part of his time should be spent with the management representatives while the periodical ability ratings or performance records of individual employees are being prepared. In some companies periodical personnel surveys are also made. When these surveys are undertaken, the upper supervision of each department or division obtains the current performance records of all employees under its direction and discusses them intimately with the supervisory group immediately over the individual employees. The personnel supervisor should be present during these personnel surveys. The purpose of the surveys is to determine which of the employees of each group and classification are best qualified and most entitled to promotion to higher-rated jobs, as well as to determine those of least ability. Copies of the individual periodical performance records and of the personnel survey reports are forwarded to and become a part of the personnel files maintained by the personnel supervisor. Personnel surveys frequently disclose cases of square pegs in round holes. It is the personnel supervisor's job to assist management in transferring such misfits, if they are well qualified for satisfactory service elsewhere.

The personnel supervisor must have a good knowledge of the promotional scheme of each department. He should uncover and seek to eliminate "dead end" jobs so that each job, if possible, leads to a chance for promotion to a better job. It is his duty to assist management in determining fitness for promotion, but he should have no authority actually to make promotions. He should keep informed of the progress, educational and otherwise, of individual employees already in the service of the company. He should know of training courses completed by employees, their standing in such courses, and their increased usefulness and ability to progress to better jobs. Promotions within any department are distinctly a duty and prerogative of the management of that department, but there are occasions when the personnel supervisor may assist management in arranging interdepartment transfers of employees especially well qualified for service in, or promotion to, some other department or location.

PERSONNEL FORECASTS

Good personnel administration requires frequent forecasts of personnel needs. Excessive hiring and firing entail enormous economic and human waste. The Central Personnel Office should know as far in advance as possible of any impending increases or decreases in operations or personnel at any point within the company. This office should be furnished with lists, by name and classification, of all prospective surplus personnel in any part of the organization. Upon receipt of this information, the personnel supervisor should consult the personnel records, including ability ratings, of all such personnel and, thereafter, should study the qualifications of such employees so that transfers may be worked out intelligently. In like manner, any department requiring additional personnel should make its wants known to the central personnel supervisor. Some companies use an employment requisition form for this purpose. Before any new employment is authorized, every practicable effort should be made to transfer available well-qualified surplus personnel to existing vacancies within the company. When this policy is pursued, expensive labor turnover is reduced and stabilization of employment is promoted.

In the event that it is impossible to fill an existing vacancy by promotion or transfer of employees or by re-employment of a well-qualified former employee, the Central Personnel Office authorizes the hiring of a new employee. In addition to the selected file of applications and qualification records maintained at the Central Personnel Office, each division or plant in other locations maintains similar records. The regional industrial relations managers keep these files, and it is their duty to seek an intimate knowledge of the personnel requirements and sources of personnel in their

areas and to perform all the duties of the personnel supervisor in their respective areas. It is usually considered best practice to do all hiring locally whenever it is feasible to do so. The chief personnel supervisor of the company maintains frequent contact with the plant and regional industrial relations managers, has a good general knowledge of the available employable personnel in each area, and works in complete cooperation with local managements. After he has authorized any local hiring, he keeps in touch with the regional managers and, in the event that personnel of the desired caliber is not available locally, arranges to supply qualified personnel from central headquarters or from some other regional office. He closely scrutinizes the qualification records of those employed in the outlying areas and plants to ascertain that such employees possess the required qualities and that the rules of the company governing hiring have been complied with.

Let it be stressed here that, whenever a vacancy is filled either by promotion, transfer or new employment, the person filling the vacancy is given the job by the line supervisor in charge, not by the personnel supervisor. The personnel supervisor simply keeps, classifies and coordinates all information on personnel, and when a vacancy is to be filled he submits the qualifications of those best suited for the vacancy to the supervisor in charge, who makes the final actual selection from those recommended by the personnel supervisor. The personnel supervisor advises management on all such matters; and, if he is successful in this advisory capacity, usually is eventually given considerable authority in the selection of those who are finally employed. Job vacancies are filled in the following order of preference: (1) by transfer; (2) by promotion; (3) by re-employment; (4) by new employment.

NEPOTISM AND OTHER ABUSES

Despite anti-nepotism rules and other regulations to insure the selection of the best-qualified person for every vacancy, there are always some supervisors in an organization who are prone instead to employ relatives, friends, political or fraternal allies, or baseball players or material for other athletic teams who lack the usual qualifications for employment. The personnel supervisor must be circumspect in such cases and should very tactfully try to dissuade the supervisor from hiring such applicants. The employment policy of most companies requires courteous interviews, and the acceptance in good faith of applications of all who seek jobs in the company, with the implied assurance that hiring will be conducted fairly and honestly, without fear or favor. The personnel supervisor should be given definite instructions to report to the industrial relations manager all cases of violation of existing rules of employment since such violations are de-

structive of good public relations and employee morale. Patently, a personnel supervisor desires to avoid the necessity of making reports of violations, so he must devote time and patient effort to assisting management in the meticulous observance of rules governing employment. When an applicant has submitted his qualifications and has been interviewed, it is the duty of the personnel supervisor to tell him frankly just what chance he may have for employment; and, if employment is likely, when it may materialize. Similarly, if the opportunity for employment is poor, applicants should be told so in forthright terms.

Most large companies, especially those engaged in manufacturing, research, and other operations requiring technically trained personnel, have established a definite policy with respect to the employment of graduate engineers, geologists, chemists, scientists, technicians and other college-trained personnel. Each year, prior to graduation, surveys are made in all departments that may require technically trained personnel to determine how many technicians of each classification are to be offered employment. Some of these companies arrange with various colleges for an interviewing group to visit the colleges, interview applicants for jobs, and discuss the employment outlook with all students who seek jobs with the company. Heads of the groups in which the young men who accept offers of employment will ultimately find jobs frequently accompany the personnel supervisor to the colleges. Through interviews and appraisals made by the visiting group, selection of those to whom jobs will be offered is made. It is generally good policy and, indeed, no more than common courtesy to let the candidates for employment know as soon as possible what offer of employment will be made, or to inform them if none is to be made.

INDUCTION PROCEDURE

Whatever the source of applicants, it is the duty of the Personnel Section to see that required examinations, procedures and paperwork incident to employment are carried out. As soon as the hiring has been concluded, the personnel supervisor should acquaint the new employee with the company's rules, benefits and policies; and should introduce him to his superiors and make known to him what routes and procedures he should generally follow. The new employee is given to understand that he is expected to look to his immediate superior for orders, information, advice on company matters, and the adjustment of grievances. He is told, however, that if and when he wants assistance or information not available through the regular line of supervision, he is free to ask the personnel supervisor to help him.

The Personnel Section keeps a complete record of every employee dat-

ing from the time he makes application for employment and extending through his entire period of employment to severance. This Section answers all correspondence on personnel matters, including all letters concerning employment, requests for transfers, etc. It also prepares the monthly labor turnover report for the company as a whole, and prepares such labor statistics as may be required by state and federal governments.

In some companies the Personnel Section publishes an employee magazine or other periodical containing items of interest to personnel.

The personnel supervisor should be well informed on company operations and policies. Employees often want to discuss their personal problems with him, and he should be approachable, sympathetic to the employee's point of view, and willing to assist employees in handling matters relating to their employment status.

In ascertaining the quantity and source of the labor supply, the Personnel Section maintains contact with state and federal public employment agencies and with employment sections of other companies. Through cooperation with these agencies, it is often possible to aid in locating jobs for well-qualified applicants who might otherwise not find suitable work.

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In conclusion, it should be reiterated that the formulation and carrying out of industrial relations policies are distinctly management prerogatives and functions that should be approved at the top and should flow uniformly through every level of supervision so that all such policies will be administered without partiality toward, or prejudice against, any employee or group of employees. The active interest and support of the chief executive of the company are necessary to insure full accomplishment of this objective. The Industrial Relations Department should not be empowered to give orders or to enforce compliance with the industrial relations program. It is a research and service department, the principal functions of which are to assemble all available information on industrial relations matters; to advise management and employees on such matters; to coordinate all such matters within the company; and to cooperate with management and employees in order fully to effectuate the industrial relations program.

HOW TO ESTABLISH A SICKNESS PREVENTION PROGRAM

Ample confirmation exists of the benefits obtained by industry through adequate programs of sickness prevention. A sound health program, it is estimated, saves the average 500-employee plant $5,611 annually. And not only is such a program a profitable investment; its operation is justified on such intangible counts as improved employee morale and better labor-management relations. This article, based on a more extensive study by the Health League of Canada, outlines the minimum standards for an adequate sickness prevention program and indicates the factors which should be checked by management in establishing such programs.

A PROGRAM of sickness prevention pays the employer in cold cash. Its cost in the average 500-employee plant is approximately half the savings achieved through preventive measures, leaving the company a substantial net profit.

Records of the National Association of Manufacturers show that the cost of sickness prevention programs varies from $5.00 to $13.00 per man per year. The cost, of course, depends on the size of the plant and the extent of the program inaugurated. For it has been found that the per capita cost of health maintenance is usually below average in the larger industrial plants, slightly above average in the smaller ones.

WHAT CONSTITUTES AN ADEQUATE PROGRAM?

Briefly, the fundamental aim of an industrial sickness prevention program is the adequate care of the health of the industrial worker. To be effective, a program should coordinate medical service with improvement in working conditions and health education of workers. It is generally agreed that it should have at least five basic objectives:

1. To ascertain by examination, the physical and mental condition of prospective employees—and by so doing to place them in the type of work best suited to them.
2. To maintain and improve the health and efficiency of those already employed.
3. To educate the worker in accident prevention and personal hygiene.
4. To reduce lost time and absenteeism due to illness or injury.
5. To improve working conditions.

Dr. M. N. Newquist, of the American College of Surgeons, states: "Each industrial organization should have a medical or surgical director. Usually the cart has been placed before the horse in the organization of industrial medical services in that the program would first be formulated by lay managements and then a doctor would be hired to render service, mostly in the

role of a medical employee. Obviously management and the medical director, together, can formulate more practical policies and procedures for a health program than would result from independent action. The assistant plant physicians, first-aid attendants, and medical consultants should be selected by the medical director, and the service as a whole should be correlated and supervised by him."

Experts on industrial medicine agree that the physician or surgeon who expects to serve as a plant physician or medical director should be actively interested in industrial medicine and traumatic surgery and that, in addition, he should possess the following qualifications:

1. He should be a graduate of an accredited medical school and licensed to practice in the state.
2. He should have at least one year's internship in an accredited hospital.
3. He should have some experience in general practice, either prior to or supplemental to his duties at the plant, to insure correct and early diagnosis of disease or defective conditions in the employees.
4. He should have a general knowledge of industrial relations, including employment methods and problems, transportation, housing, recreation, educational facilities and methods, and employees' benefit plans.
5. He should be qualified to determine, by examination, the type of work best suited to the physical and mental conditions of workers and prospective employees.
6. He should have a knowledge of the ingredients and of the toxic and disease-producing qualities of all the materials and processes used in the industrial organization which he serves.
7. He should have a knowledge of sanitation, of working conditions, of accident and occupational disease prevention methods, and of preventive health measures in general.
8. He should have a knowledge of the diagnosis and treatment of occupational diseases.
9. He should be competent in the diagnosis and handling of all traumatic lesions which he undertakes to treat.
10. He should be versed in procedure for follow-up and rehabilitation.
11. He should have a knowledge of workmen's compensation legislation.
12. He should have knowledge of an efficient medical record system and of statistical methods.
13. He should have an unbiased industrial viewpoint and a confidence-inspiring personality.

14. He should realize that his first duty should always be to the workman whom he examines or treats.
15. He should like people.

Another authority adds: "The place occupied by the doctor in the organization is of great importance. Should he be placed in the same position as an ordinary employee, he will lose not only professional standing in the eyes of the worker but also the worker's respect, confidence and trust."

PART-TIME vs. FULL-TIME PHYSICIANS

For any system of medical supervision to be satisfactory, it has been recommended that the physician-in-charge work directly with the head or director of the company, although in some cases he may work with the personnel director or whatever company official is in charge of employee relations. "The absence of such an arrangement is often the reason why a full-time physician fails, where a part-time one succeeds. The latter is in a better position to resist attempts to subordinate his work in the organization."

While the full-time services of a physician are desirable to insure the most efficient type of service, the size and type of plant will determine whether a part-time or full-time physician should be employed. The physician who devotes part of his time to a plant can still assume supervisory responsibility. He will be able to render acceptable medical service by delegating some of his detail work to assistants. It is the contention of many experts in industrial medicine that private practice, which tends to keep physicians abreast of scientific knowledge and skill, makes a physician more valuable to industry. That is why some of the largest corporations encourage or permit their medical directors to engage in private practice in addition to their industrial work.

The importance of outside consultants to insure the effective operation of the health service has been frequently emphasized, and in some cases it has been found necessary to keep a reserve physician on call in case of emergencies.

SURGEONS AND OTHER HEALTH PERSONNEL

It is generally agreed that outside consultants should be called in early by the industrial physician or family doctor to insure accurate diagnosis or treatment in surgical cases. The industrial physician is usually a man of broad experience who is able to bring executive and diagnostic ability to his organization, as opposed to the specialized training of the surgeon. The physician in industry should therefore recognize his limitations and refer cases outside the scope of his training to a competent surgeon.

Authorities agree that industrial plants should have on their lists one

or more dentists qualified to examine employees and advise on the relation of mouth hygiene to health.

Most health programs include the services of a graduate nurse. She should have, in addition to a liberal education and the usual hospital training, a sense of social responsibility and a broad outlook which prompts her to think in terms of prevention as well as cure. A background of experience in the public health field will be invaluable to her in such work. The industrial nurse should be a competent assistant to the doctor who helps him to get the most done during his time at the plant and keeps accurate records on absenteeism. She will render first aid to control wound infection, give advice to employees on health problems, and distribute data on health education. The nurse should visit the employee at work in order to appreciate the nature of his job and problems. Home visitation is also important. She must be able to convince workers that she is concerned with their best welfare and is not prying into personal affairs. In such work she will be able to bring the employer's viewpoint into the home, and report to the employer the viewpoint of the worker and his family.

Ability to advise on well-planned meals, matters of sanitation, housekeeping, proper clothing—all will be invaluable to her in this work.

THE DISPENSARY

The size and equipment of the dispensary will, of course, conform with the needs of the individual plant. Before considering arrangements for a medical department, it has been found necessary to confer with the plant physician or medical consultant in order to provide for adequate facilities. The Conference Board of Physicians in Industry recommends the following standard facilities, suitable in small factories for preliminary treatment and for the dressing of minor injuries, although more extensive equipment is usually found necessary in larger plants:

> A first-aid room should be not less than 9′ x 12′ in size, should be well lighted and ventilated, should have running water—hot as well as cold, if possible—should be provided with toilet facilities in or near the first-aid room. The light should be particularly good at the point where the first-aid service is to be rendered, where an adjustable electric lamp would be very serviceable and convenient. Aside from ordinary good ventilation, it is desirable to arrange for a large inflow of air, by fans or otherwise, to stimulate patients when feeling faint. The ceiling and walls should be light in color and frequently cleansed.
>
> The room should contain at least the following equipment:
>
> One small wooden or metal examination table with pads, with ends hinged to drop down.
>
> One stretcher of the army type (canvas stretched over two round wood poles) or one of metal.

One small instrument sterilizer arranged for electric, gas, alcohol or kerosene burner.

One-half dozen utensils, such as arm and foot basins, three- or four-quart ordinary basins, two-quart dipper, bedpan, etc.

One portable first-aid outfit.

Appropriate instruments, including razor, dressings, splints, drugs.

A small section of the room allotted as an office to give employees privacy during interviews with the plant physician.

FUNCTIONS OF AN INDUSTRIAL HEALTH SERVICE

It is agreed that medical service in industry should be planned, wherever possible, to maintain the health of workers and to prevent ordinary illness as well as occupational sickness and accidents. Employers have recognized the advisability of physical examinations for all workers. The examinations are the means of ascertaining the physical qualifications of prospective employees and fitting them to jobs where they will not experience discomfort or cause injury to themselves, to others or to property. Job placement should always be adopted. Employees and prospective employees can be made to understand that the results of the physical examination are to be used to their advantage in placing them in a branch of work best suited to them. In times like the present, when industrial manpower must be conserved, physical examinations are especially important.

Re-examination at appropriate and regular intervals has been found advisable and in most cases necessary. Periodic examination, or "continuous health supervision," has a twofold advantage:

1. Diseases or defects are diagnosed early.
2. The employee is assisted in maintaining regularity of work.

Where occupational disease hazards exist, *periodic examination* has proved to be a safeguard in disclosing the effects of the hazard and in correcting conditions at the source of exposure. It is reasonable to assume that it will have the same definite value in controlling general illness among industrial workers.

HEALTH PRESERVATION AND DIAGNOSTIC SERVICES

An important duty of the medical department is to discover illness at its inception and to prevent the occurrence and spread of contagious and infectious diseases. If an employee is reported absent from work because he has a communicable disease, the matter should be referred to the plant physician or medical department for investigation. Employees who are ill should be given attention at once, and precautionary measures for other employees should be recommended.

Individual diagnostic service has been found valuable in most factory health departments. It is obvious that, without an accurate diagnosis, no scientific treatment can be administered properly. Early diagnosis has proved to be a decided advantage to employees in recognizing their condition, arranging for treatment, and thus reducing absences and wage loss. It has been found advisable by some plants to provide such accessory services as clinical, laboratory and X-ray examinations. A detailed report is sent to the family physician, and consultation is offered if desired. This service has been justified because it facilitates a more prompt return to work and has proved a definite aid to physicians.

Diagnostic work also provides the opportunity for separating occupational from non-occupational diseases.

HOME VISITATION

In order to control absenteeism, it is often practical for some member of the medical department to visit the homes of the employees. Considerable diplomacy must be used when home visits are made under plant supervision. This job can usually be handled effectively by the industrial nurse, who will thus have an opportunity to bring about an exchange of viewpoints between employer and employees. Home visitation, when properly conducted, is invaluable in personnel relations.

WORKING CONDITIONS

Authorities are agreed that a plan to improve plant working conditions is a basic factor in a medical program. Many forward-looking executives have made certain that their employees are provided with working quarters which are properly ventilated, heated, lighted, provided with locker rooms, shower baths and other washing facilities, lunchrooms and recreational facilities. There is no doubt that these measures help to reduce absenteeism, labor turnover, cost of injuries, and incidence of sickness and accidents. In this way, better personnel relations have been cultivated and high-grade job applicants more readily attracted.

The U. S. Public Health Service has prepared an outline of points for consideration in the regulation of working conditions which may be summarized as follows:

1. Adequate lighting, properly distributed and free from glare.
2. A properly supervised and maintained exhaust system for removal of dusts, vapors, fumes and gases.
3. An abundant supply of pure, cold drinking water (not ice-cold) within easy reach of employees.
4. Attractive, quiet rest room for women.

5. Lunchrooms or places where a hot lunch of nourishing, well-cooked food, selected according to a scientific dietary, may be purchased at a reasonable price and eaten in attractive surroundings.
6. Washroom facilities, with a supply of soap and towels; shower baths for the convenience of workers.
7. Use of recesses in special types of monotonous or heavy manual labor. This applies also to monotonous types of clerical or light labor.
8. Variety in work where undue mental or physical strain may be developed.
9. Adjustment of work speed to employee's ability.
10. Modification of unnecessary or particularly tiring motions and operations.
11. Provision, when practical, for adjustable and properly made seats.
12. Proper ventilation of workrooms.
13. Adjustment of the hours of work to control undue fatigue.
14. Avoidance of excessive overtime.
15. Control of unnecessary noise.
16. Sanitary conditions around plant buildings.
17. Proper medical attention.

A systematic campaign of health education among employees is essential. This involves the distribution of appropriate literature and booklets to encourage better health habits among workers.

"It is most unfortunate," comments one executive, "that the success of many industrial programs is jeopardized through failure to convince employees of its benefits to them and to their families. Workers are human. They are grateful and appreciative of a service when it is presented to them in the proper light."

A final word to employers: Technical assistance in developing a program of health conservation, covering such items as its objectives, scope and methods—including type of personnel and equipment—is available from government health officials.

TRAINING MEN AND WOMEN FOR TIME STUDY

By DAVID D. GARVEY
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More and more serious is becoming the plight of time study departments, which, handicapped though they are by a shortage of manpower, must nonetheless expand their facilities to keep pace with a tremendous increase in production. In the following paper Mr. Garvey describes how Wright Aeronautical Corporation redesigned its time study training program to bring its time study department up to ten times its former strength. Under the new streamlined program, men and women are trained in the essentials of time study in eight or nine weeks. This paper was originally presented before the Northern New Jersey Chapter of the Society for the Advancement of Management.

THE school of thought which holds to the belief that good time study men are born, not made, will doubtless take much encouragement from the rapidly rising birth rate of recent months. However, faced with a constantly growing need for men and women in this field, we at Wright Aeronautical Corporation were unable to await the harvest of nature's crop and were compelled to take other measures to bring our Time Study Department up to wartime strength.

With conditions as they are today, speed is the crying need. We have experienced a tremendous increase in the pace of production, complicated by a shortage of manpower and machines. One of the problems we had to cope with was that of expanding our small department of time study men to perhaps ten times its former strength. The building of additional plants required the duplication of time study personnel; new models, and substitute materials, methods and equipment, multiplied the volume of measurement in existing plants. An influx of new, not always too well-trained, supervision did not lighten the burden of the time study department. We were seriously handicapped by the shortage of men trained for this type of work. Previously we had been able to fill all vacancies with men of at least as good caliber as those they replaced; we had a normal labor turnover—mostly men seeking greener pastures—and, under such conditions, the training of replacements was a relatively simple matter. The candidates for time study work were of excellent material, and nearly every member of our department was a qualified instructor. A new man would be assigned some basic reading material and turned over to an instructor, with whom he remained for some months, learning by observation and asking questions. Each rule and procedure was demonstrated when an illustrative situation arose in actual shop practice. When the new man had

"gone through the mill," we were reasonably sure that he had coped with almost every possible contingency that might arise in the normal course of his job—that everything that possibly could happen had happened. Naturally, under such a system the training period was unavoidably long, but even with a small department the training of an occasional new man did not pose too many problems.

The first impact of wartime expansion on the Time Study Department was felt in the loss of a considerable number of our topnotch men to the ranks of supervision within the company and to the military services. The loss of these men not only created an extra burden of routine work for those remaining but reduced the time that each could devote to instructing the many new replacements. Our key-man power was of necessity now being spread more thinly to cover more ground—we found that the training of new personnel was being prolonged beyond the point of efficiency, and that the number of new people who could be trained at one time was decreasing.

The second effect of the expansion was the rapid deterioration of the labor market. The cream of the crop was being diverted to the Army, Navy and Air Corps, and we found that even whole milk was getting scarce. The personnel we were able to hire, while good potential material, required more instruction than the new men of the pre-war days. Thus we were confronted with the twofold problem of a decrease in men and time available for instruction, and an ever-increasing group of trainees. As a stopgap, we were forced to delegate a portion of the instruction to our second line of defense—men relatively new in the department; but the results were not entirely satisfactory. The transmission of false ideas and errors became apparent, omissions were multiplied and the "why" angle was in danger of disappearing from the instruction altogether.

It was obvious that we must redesign our training program to avoid the danger of "Too little, and too late" in establishing labor standards throughout our company's various plants. Twelve years' experience with our present labor measurement system has demonstrated that jobs on daywork are worth 60 per cent of a day's work, and that production on these jobs can be increased to 120 per cent or better with operators working on incentive. This 100 per cent increase in production would help existing manpower and equipment, and would certainly relieve many tight spots in the over-all production program. Here was the stimulant for streamlining our training program!

We could not afford to dissipate our time and efforts in giving the wrong training or in training the wrong people. Centralized control of the entire new training program was obviously the first step to be taken, and as a start in this direction a Supervisor in charge of Time Study Training was ap-

pointed. This man is charged with the duties of preparing and conducting courses in time study; the instruction of trainees; and the preparation of a manual or "Time Study Bible" for the standardization of departmental policies and procedures. All instruction is centered in his hands, and he is invested with the proper authority to assure success of the plan.

The first part of the training period is spent in the office, with occasional trips to the shop to illustrate certain points brought out during instruction. This period usually occupies approximately two weeks, some 30 hours of which is devoted to lectures and demonstrations, and the balance to routine office work, problems and reading. Throughout this time, and during the entire training program the responsibilities of his new position are impressed on the trainee. Several points are stressed: first, the importance of maintaining the prestige of the Time Study Department as the link between management and labor; second, the necessity for educational work in selling our cause to the operator; and third, the desirability of displaying a friendly and cooperative attitude when questioned by operators on matters pertaining to time study. The urgent need for the second point above has been clearly demonstrated in recent cases where new men, recruited from the shop, have come to us with many erroneous ideas and misconceptions concerning the principles and functions of time study.

The orientation pace is leisurely, but once the trainee is oriented the pressure is on. The lecture period is broken up nearly equally with study and practice periods designed to supplement the instruction. The subject of rating is now considered; and following the demonstration of the need for rating, the trainee is taught to recognize the various degrees of effort and to relate them to normal. For this part of the training program we have adopted a method outlined by Ralph Presgrave, of the J. D. Woods Company, Canada.* This system enables us to start shop training in rating with a basis of experience rather than an abstract idea. The trainee is taught to relate a familiar performance to normal by the walking practice outlined by Mr. Presgrave. All that remains is to familiarize him with our conception of a normal effort of work, and to teach him to use the sense of tempo, "gained in the walking practice," to relate observed variations to our normal.

THE LECTURE PERIOD

The material covered in the first two-week lecture period carries the trainee through all phases of time study, from the organization of our department to the maintenance of standard conditions and standard times. Throughout the lectures, various rules and policies are fixed in the trainee's

* See "Effort Rating," a paper presented before the Industrial Management Society at Chicago, November, 1940.

mind through careful treatment of the reasons behind them. Wherever possible, all illustrative material is sought in the experience of the trainee. We feel this is necessary because the instruction is so intensive that every possible source of confusion must be avoided. For the same reason, we are conscious of the fact that "highfalutin" terms or plans would not help us in doing this job, and have accordingly adopted simplicity as the keynote of the entire training system.

The trainee is encouraged to ask questions in order that the instructor may be able to adjust the pace of instruction to the individual. When questions are not forthcoming, the instructor takes a turn at questioning. The trainee is expected to develop reasonable skill in the use of the slide rule and to master the various formulae and computations important to our work. The end of this period sees the new man prepared to go to the shop and start acquiring a first-hand, practical knowledge of time study. We try to give him enough of the "why" of the job to enable him to work out many of the "hows" as new situations arise. We show him where to turn when some insolvable problem faces him. At this point it should be noted that the time saved in the new program lies not in a reduction of instruction hours but in the substitution of "work" for "wait" in what were formerly long gaps between instruction periods when certain lessons were based on working out problems in actual shop practice.

The "high spots" of the lectures may be itemized as follows:

1. The time study job.
2. The importance of time study in the organization.
3. The time study man.
4. His relation to labor and supervision.
5. Method analysis, tools of the trade, element breakdown, clocking technique.
6. Element selections.
7. Rating and its application.
8. The construction and application of allowances.
9. The standard time, its *dimension* and its meaning.
10. The maintenance of standard time and conditions.
11. Standard data.

These high spots, along with the conjunctive material, provide adequate coverage of the field. In addition, the following cardinal rules, based on our own experience, have been laid down for the guidance of the trainee:

1. Take nothing for granted.
2. Eliminate, combine and simplify.
3. Maintain an open mind.

4. Take care of quality (measurement) and quantity will take care of itself.
5. Judgment is the essence of time study.

Following the lecture period, the trainee spends approximately three weeks in the shop with a senior time study man. It is the responsibility of this man to introduce him to shop conditions: to acquaint him with supervision, to explain further our conception of normal effort, and to familiarize him with shop paperwork and with all the many little things that occur on the floor. Here the trainee sees practical application of much of the information he has absorbed in the lecture course. He is given an opportunity to try his hand at time-studying and comes face to face with the degenerating effect of tight and loose standards.

After this period on the floor, his training and theory should be sufficiently rounded out. He is now returned to the instructor for examination and further instruction. The extent of this instruction is determined from a report, written by the senior time study man, of the faults and abilities of the trainee. The accuracy of his watch work is tested. Additional instruction is given in standard data and in the problem of maintenance. The new man returning from his initial period on the floor generally raises a number of questions about some of the "hows" that he could not understand. This second period in the office approximates another week, depending on the nature of the problems presented by the new man.

He is then assigned to a department and, after two or three weeks spent in becoming "acclimated" under the supervision of a senior time study man, is ready to begin taking time studies. For the next 10 or 12 months the ex-trainee is kept under close supervision, the degree of supervision depending on his ability.

The training program outlined above is the result of a careful study of the deficiencies of the plan it has replaced. That the old plan was a sound one, under the conditions in which it functioned, cannot be denied—but like the old village blacksmith shop, it died a slow death because it was not adaptable to mass production. We believe the value of our earlier system is evidenced by the rather impressive array of top men in our organization who have advanced from the time study department.

We do not claim to produce finished time study men in eight or nine weeks with our streamlined training program, but we do turn out the basic material for a specialized man. The clay has been mixed and molded, and all that is needed is that it be fired by experience. This firing takes time, but we are confident that the brick will be up to specifications and that it will match its more seasoned brother when the firing process is finished.

THE PERSONNEL BOOKSHELF

Industrial Supervision. By Lewis A. Froman and Scott B. Mason. The Foundation Press, Inc., Chicago, 1942. 341 pages. $2.50.

Reviewed by Frank Cushman

THIS book is presented by the authors as a discussion of 20 or more "subjects" in which a supervisor should be well grounded. It is intended for those who have had work experience, and emphasis is placed upon the fundamentals of supervision which, according to the authors, should be of value to all supervisors from the superintendent down to the first level of supervision. The book designates supervision as an *art* rather than as a *science*, and the importance of studying basic principles is stressed—the assumption being that, if the basic principles are thoroughly understood, the individual supervisor will be able to work out his own applications to specific problems. For the volume as a whole, the appeal to the reader is more along the line of how he may equip himself for advancement than of the specific techniques of supervision applicable to his own job.

Of the 21 chapters comprising the book, the first four are concerned almost entirely with the supervisor's job, the qualifications which he should have for the job, and the responsibilities of which he should be fully aware. These chapters offer many excellent suggestions as to ways in which a supervisor can satisfactorily measure up to the responsibilities of his job.

Material comprising nine chapters of the book relates largely to production engineering, and eight chapters deal principally with matters of which the personnel department of a large organization usually has cognizance. Of the 17 chapters dealing with production engineering and personnel management, a number discuss to some degree the job responsibilities of supervisors even though all the subject matter presented does not fit into the same category as the context of the first four chapters.

The importance of leadership is properly stressed, and the authors' discussion of that attribute of a good supervisor is excellent. In this connection, the three degrees of loyalty which may be expected from an employee are well stated. The reasons for expecting loyalty in different degrees, depending upon the factors mentioned, should be fully appreciated by every supervisor.

Discipline is discussed principally as something to be enforced, and constructive discipline, which is developed in the individual, is but lightly touched upon. Training, which is regarded by many as one of the highly important phases of the supervisor's job, receives scant attention in a discussion covering approximately two pages of the book.

Chapter 11, on advancement, offers some valuable hints to supervisors. Chapter 12, on safety and the need for the observance of safe working practices, contains many helpful suggestions concerning common hazards and emphasizes the responsibilities of supervisors in accident prevention. The chapter on unions is almost entirely informational. At the conclusion of that chapter, 10 things that the worker expects of his super-

visor are well stated, as are the 10 "don'ts" enjoined upon supervisors. These topics, however, are mostly unrelated to the rest of the chapter.

This book should be a useful reference text in connection with supervisory training, but it is doubtful that it would be entirely suitable for assignment as "follow-up" reading for supervisors whose principal need might well be to develop their skill as "supervisors" of men. This criticism, of course, would not apply if the needs of a supervisory training group were either to secure a better grasp of the elements of production engineering or to acquire an understanding of some of the principal aspects of the job of a personnel officer.

Elements of Supervision. By William R. Spriegel and Edward Schulz. John Wiley & Sons, Inc., New York, 1942. 273 pages. $2.25.

Reviewed by Frank Cushman

THIS book is an important addition to the rapidly growing literature on the training of supervisors. It is particularly valuable because it deals with the job of supervision as such, and avoids confusing the technique of supervising men with production methods and efficiency engineering. While the emphasis throughout is on the human element, the book offers a great deal of excellent informational material which can be used to advantage as assigned reading in connection with any supervisory training program. The point is clearly brought out that the supervisor has a job which calls for the exercise of judgment, and the three major functions of the supervisor are specified. These are: (1) to organize, (2) to deputize, and (3) to supervise and follow up.

Chapter IV, on interpreting company policies, presents an excellent discussion of the need for proper interpretation of policies by the supervisor. Some of the difficulties encountered and the technique which may be used for dealing with them are mentioned. The outstanding importance of dealing fairly with workers is properly stressed in Chapter V, and the probable results of violating that fundamental principle of good supervision are indicated. The chapter on uncovering and adjusting grievances is a good but fairly brief discussion of that type of problem.

In Chapter IX, "The Supervisor as an Instructor," emphasis is given to the fact that instruction is always being carried on, and a convincing case is presented for the use of the "intentional" method of approach as opposed to the "absorptional" method. Some of the recognized principles of good instruction are discussed, but a number of important ones are not mentioned. Suggestions are given regarding the "Teaching Steps," but they are not particularly well stated. In general, however, this chapter presents a good argument for a program of organized training. There is some further discussion of training in the subsequent chapter.

The chapters on "Wage Administration and Merit Rating" and "Transfers, Promotions and Discharges" discuss all too briefly the causes of some of the chief headaches of supervisors. Causes of misunderstandings are mentioned, and suggestions are offered as to ways of handling various types of situations.

The meaning of cooperation is stressed in Chapter XIV, and the need for it emphasized. Again the matter of employee attitude is discussed, and specific suggestions of value in inducing and encouraging cooperation are included. Some excellent pointers are given covering the ways in which a supervisor can handle this phase of his work.

Chapter XVIII, "Maintaining Discipline," deals with a very real problem

for every supervisor. The distinction drawn between "positive" and "negative" discipline is excellent. This chapter should be on the "must" list for assigned reading in connection with every training program for supervisors.

Chapter XX, "Supervision and Labor Relations," contains some very helpful information and treats effectively the responsibilities of the supervisor under existing laws governing labor relations.

Features of the book which make it particularly valuable and timely are found in Appendices A and B. Appendix A, "Suggestions for Conference Leaders," offers a number of excellent suggestions, and the conference outlines included in Appendix B should prove especially helpful to persons responsible for supervisory training programs.

Under appropriate conditions the text could be used with groups of supervisors as advanced reading followed by conferences. Also, the book might constitute excellent follow-up reading for supervisors after conferences have been held on the several subjects, topics and problems presented. In most cases supervisors would probably derive much more benefit from the text if it were carefully reviewed by them by sections or chapters subsequent to conferences on the same or closely related topics than they would if the text were studied first and then discussed in conference groups. Regardless of how it may be used, however, the book will prove a valuable source of basic functional information on the supervisor's job. As such, it should help to meet a recognized need for text material to supplement supervisory training programs conducted by any of the recognized training methods applicable to such work.

Principles of Employment Psychology. By Harold E. Burtt. Harper & Brothers, New York, 1942. Revised edition. 568 pages. $4.50.

*Reviewed by Edward N. Hay**

THIS is a thorough revision of the original edition of this work, first issued in 1926. It should prove a helpful general treatise for those having no particular familiarity with the subject. Beginning with an exposé of the "intellectual underworld" of astrology, palmistry, phrenology and other pseudo-psychologies, the author then offers a brief history of the development of systematic methods of human evaluation. Chapter Four is an excellent description of a great many mental tests, and later chapters deal with trade tests, intelligence tests, and special ability measurements. Attention is devoted to methods of predicting job success by means of tests, and to the necessity of having a valid criterion against which to establish the predictive efficiency of the tests. Other chapters deal with interests, job analysis, and rating scales.

Each chapter is succeeded by a long list of references. The references to works published prior to 1926 appear to be more numerous than those to works of recent years, suggesting that the lists of the newer references are incomplete, or perhaps that the older ones have not been thoroughly culled.

This is a well-written volume, and its readability enhances its usefulness. It could be profitably studied by anyone interested in applying scientific methods to the analysis of human ability.

* Personnel Officer, The Pennsylvania Company.